

**SUPPLEMENTAL EIS
RESPONSES TO COMMENTS**

**THREATENED AND
ENDANGERED SPECIES**

Terrestrial T&E Species	TE-500
Aquatic T&E Species	TE-501

TE-500 Terrestrial T&E Species

1. I do not understand the idea of "mitigation" for endangered species such as grizzlies. Even if Asarco could identify 2300 acres of critical habitat proving that it is critical, and obtaining that land before any proposed mine began what I don't understand, is, if it's critical habitat and they buy it, they haven't created it. A net loss still occurs. (S4)

Response: The 'mitigation' is provided in several ways. First, the 'replacement' lands are selected from suitable grizzly bear habitat areas that are or highly likely to be facing modifications in the future. For example: a parcel may provide good habitat now but the owner may be planning to subdivide the land. This could result in further habitat loss. The mitigation for Sterling would be to ensure future usability of these types of lands. In addition, Sterling would be providing habitat improvements on existing lands through such things as road obliteration and closures (in a sense recreating higher quality habitat).

2. We also want to re-emphasize our position from our original comment letter strongly opposing any attempt to force ASARCO to acquire additional private property for grizzly bear habitat or corridors. With over 3.5 million acres of satisfactory habitat available on the Kootenai and Kaniksu National Forests, there is ample room available for the recovery of the grizzly bear without acquiring any additional privately held lands. (S25)

Why is any mitigation necessary? Is there not currently sufficient habitat for grizzly bears? With public lands in the surrounding vicinity of this project in excess of 90 percent there appears to be plenty of available displacement area for grizzly bears that would possibly avoid the project site. (S6809)(S67)(S25)(S1434)

Response: The impacts of the Rock Creek project are not minor and short term (see Chapter 4, Threatened and Endangered Species). Mitigation does not require the 'replacement' habitat to be turned over to federal ownership, it does require ensuring the habitat is secure for grizzly bear use into the future. This is needed to comply with the Endangered Species Act which seeks to ensure the suitability of the habitat to support a persistent, self-sustaining and self-regulating population. Even though the population size is small and the habitat is not fully occupied at this time, adequate habitat must be provided to meet the need of a fully recovered population (see Grizzly Bear Recovery Plan). By law, under the Endangered Species Act, adverse impacts must be mitigated, to the extent possible.

3. We are shocked to see the tables in the supplement dealing with road management for grizzly recovery. We specifically refer to Tables 6, 7, 9 and 10 that deal with moving windows route densities and existing core habitat analysis charts. These are the very tables presented as the basis for the revised standards at meetings held late this past summer of 1997 in Thompson Falls, Bonners Ferry, Troy, Libby, and Eureka. In Lincoln County we had in excess of 10 hours of total meeting time on this topic with over 3 ½ hours spent each in Troy, Libby and Eureka. In the grizzly bear management units on the Kootenai National Forest 75% of the roads are now closed whereas about 50% of the roads forestwide are closed. This is a major social issue.

We were told that this proposal would be adjusted to respond to the public reaction which was extremely resistant to more restrictive road management standards. Over 95% of those present clearly stated they have reached the limits of tolerance for increased road closures and further restrictions in access to public lands. There were about 100 people present at each meeting in Lincoln County for a total of about 300 people expressing their deep concern. We view this as not only a blatant disregard for the public, the people we all serve, but also as a clear violation of your commitment to us at those meetings. You are proposing to once again implement a standard here that has not gone through the process to achieve public confidence and public support. We are quite displeased and feel a public explanation is in order by all three agencies involved! (S25)(S67)(S6809)

We feel it is misleading and inappropriate for charts, calculations and desired levels of new standards to be included in the supplement. Especially when the public was told these new methods have not been adopted yet. We

object to the inclusion of the Moving Windows route densities and Project Core habitat analysis summaries. This just subtly introduces data that will later be referenced to build a hard and fast standard based upon utilizing the best, most current available science. If these means of analysis are not currently required within the existing Forest plan, why are they included in this document? (S6809)

Lastly we hear from land managers throughout our region that these new standards derived from the moving windows route densities and core habitat are already being implemented through consultation with absolutely no public involvement or awareness. This is a primary reason there is so little faith and trust in the federal government in our communities. How can you gain public acceptance when there is implementation without public review in Idaho and Montana? (S6809)

Response: The National Environmental Policy Act (NEPA) requires using the best and most current research in the analysis of environmental effects. The concepts of core habitat, and moving windows analysis of road densities is the best science available at this time. It is clearly stated in the analysis that the information is provided only as a comparison tool. However, there are no standards established at this time and none will be applied until such time as the Interagency Grizzly Bear Committee develops and approves them, following a public involvement process. Since the analysis area does not meet current standards, mitigation is proposed that would close additional road miles to bring the area up to current standards. The proposed road closures/restrictions simply maintain existing conditions in terms of open road miles. New roads are being built and existing ones are being closed. Without the proposed closures, the project would not comply with the Endangered Species Act and could not go forward.

4. It is my understanding that private landowners will be relied upon to provide bear mitigation for the mine. Why? Justify! Mitigation, as discussed in Appendix 5 of Supplement, involves the purchase of 2350 acres of private land. Where will Asarco find available private land that provides suitable habitat? These lands should be identified for the public, before a permit is granted, as well as analyzed for substitute habitat suitability and identify who will be responsible for the mitigation land and how it will be kept intact. Provide verification that the land is secured before consideration of the plan. Require mitigation for Rock Creek to be confined to Rock Creek and not in other drainages. (F1)(S140)(S177)(S1705)(S2866)(S3466)(S3974)(S4364)(S4832)(S4833)(S4891)(S4912)(S5051)(S5088)(S5555)(S5763)(S6588)(S6613)

Page 2-78 4th paragraph ASARCO would replace 2,350 acres in conservation easement. Where is this? If on FS lands - it may preclude use by humans, hikers, etc. Loss of multi-use approach as federal FS mandate. Translates to loss of passive use of an area due to active habitat degradation due to ASARCO's mining plan. (S4832)(S4833)

Response: Private land owners are not the only source of mitigation. Federal land would provide habitat improvements and replacement habitat through road obliterations and closures. Mitigation lands are not provided just through purchase. Conservation easements or land exchanges are also considered acceptable. The 'replacement' habitat lands being considered are identified and their suitability as habitat has been analyzed, however, the release of that information is exempt under the Freedom of Information Act (Forest Service Handbook [FSH] 6209.13) because the selection of actual mitigation lands from the list of potential lands is pre-decisional. This is based on not knowing the exact lands that will end up being selected. Because this information is pre-decisional, early release may result in 'harm' when knowledge could be used to increase land prices. Memorandums of Understandings would be developed, prior to any on ground activity, between Sterling; Montana Fish, Wildlife, and Parks; U.S. Fish and Wildlife Service, and the U.S. Forest Service that would identify responsibilities of each party concerning the mitigation lands. Mitigation priorities were established with 'on-site (in Rock Creek drainage) mitigation having higher priority

than 'off-site' (outside of Rock Creek drainage). An implementation schedule is in place to ensure timely protection of replacement habitat.

A new analysis on recreation use and impacts of recreation use on grizzly bear was added.

5. *Since 2000-3000 acres of private land would be required for grizzly bear mitigation for this proposed project, several very important questions arise that I have yet to see addressed in this SDEIS. Where are these acres? They should be identified and locked in before the project is permitted. Mitigation acreage is under demand by BPA for the Libby Dam project, by Noranda for its proposed Cabinet east side project, by Washington Water Power for its FERC relicensing requirements. And also by Asarco? There are virtually no large, quality wildlife lands still available in this region that have not been already targeted. And real estate prices have sky rocked to the point of absurdity. How are these acres to be protected in perpetuity? These mitigation lands must not be sold in 30 years for development. What process will be in place to handle this? Why should private, non-industrial landowners bear the burden of mitigation lands to enrich the pocket books of a mining company? Why should Asarco be allowed to put forth their denuded, logged, burnt lands as potential mitigation acres? If it does, the acres should be seriously discounted. Destroyed real estate cannot be exchanged for pristine wilderness acres. Mitigation lands should come from drainages adjacent to the affected areas, not from 50 miles away. Page 4-123 Mitigation for physical habitat loss: any mitigation for habitat loss has to be in kind mitigation, not just the purchase of land or conservation easement here there and anywhere. (S471)(S614)*

Response: Replacement acres would be in place prior to on ground activities, as shown in the mitigation plan. Memorandum of Understandings would be signed by appropriate parties (i.e. the U.S. Forest Service, U.S. Department of Fish, Wildlife, and Parks, the Montana Department of Fish, Wildlife, and Parks, etc.) that would establish the process of assuring compliance with providing the replacement acres. All proposed replacement lands have been analyzed for available habitat units. This analysis accounts for land condition (i.e. previous harvest activity, roads, presence of huckleberry fields and other habitat components, etc.). This process establishes a common point of reference for all lands and allows comparisons to ensure replacement habitat provides equal or greater habitat value than habitat impacted by the project. For example, the impacted area might be 483 acres and have 1019 habitat units. The replacement land for this impact cover 640 acres, but have the same number of habitat units (1019). See previous comment for more information.

6. *I am concerned about the approximately 4 or 5 square miles of private lands proposed under all action alternatives to be provided by ASARCO. These lands are to be under conservation easements or direct transfer to public land status not open to mineral locations as I understand it. My concerns are three fold: Loss of these lands from the tax rolls. The impediment to and restriction of future human settlement and economic development. Foreclosure of future development of a major undiscovered mineral deposit that may exist on the land package wherever it is located. ... does not support the potential purchase of private lands for grizzly habitat mitigation. Only 20% of the lands in that area remain in private ownership. The tax base continues to erode on a local level, while our federal tax dollars continue to be stretched in trying to compensate our counties for those property taxes which are lost due to federal ownership. As to the grizzly bear, I am concerned not only about determining mitigation measures at a later date but whether mitigation measures are required at all. There is no lack of land available to the grizzly bear in the Cabinets. The probability of grizzly bear needing the land which Asarco will disturb during its life is remote. Further road closures should not occur and would not be tolerated by residents who have seen 50-70% of the forest roads closed in areas managed for the grizzly. The land base in this area is largely under federal ownership (80%). The Asarco Rock Creek Project should not meet the same fate as the Montanore Project due to mitigation for the grizzly. Further, requiring large amounts of private land to be purchased for grizzly bear mitigation, is not reasonable or prudent. Lincoln and Sanders Counties cannot continue to see an eroding of their tax base without conclusive proof that there is not another option. That proof does not exist. (F1)(S5827)(S5813)(S4891)(S4912)(S5051)(S5088)(S5555)(S5763)(S5827)*

Since the mine will appear only for a specific window of time, it is proper to consider a mitigation program that will be concurrent. Whatever land base mitigation is implemented should be acquired with the condition that it reverts back to former use when the mine is finished and the land is reclaimed. Permanent mitigation in the form of conservation easements or acquisitions potentially will negatively affect the tax base. Private lands in this vicinity are at a premium with more than 90 percent public lands under USFS management. This loss of private lands to mitigation in this area is unreasonable. Forest receipts from the public lands have decreased 50 percent over the last four years. Local governments are fast losing flexibility. (S6809)

... CURE may support reasonable mitigation for the grizzly bear but will not support the purchase of private lands or any mitigation which would financially or physically prevent the Rock Creek Project from being brought into production. (S5835)

Response: The lands may or may not be lost from the tax rolls. Private land purchases are not the only method of mitigation. Conservation easements and land exchanges are also acceptable. If a conservation easement is granted the taxable value may change but the lands would not be removed from the rolls. If a land exchange occurs, those lands acquired by the Forest Service would be removed from the tax rolls, but payment in lieu of taxes would be made. Those lands traded by the Forest Service would be added to the tax rolls. A conservation easement would prevent construction of new residences and development of a newly discovered mineral deposit only until the time frame agreed to in the easement (likely to be a minimum of 35 years).

Mineral location activity would be allowed on federal lands as it takes an act of Congress to withdraw lands from exploration. Any proposal to develop a new deposit would then be required to go through the NEPA/MEPA process. The lands proposed to be disturbed by Sterling are already known to be used by grizzly bear (research annual program reports by Kasworm and others 1989-1995). The grizzly roams over large areas and prefers unroaded habitat. While there are many acres of Federal lands, not all of it meets bear requirements for suitable habitat.

The costs of mitigation proposed compared to the projected values of the ore deposit are minimal.

7. Black bears and grizzlies would be significantly impacted by the destruction and alteration of hundreds and thousands of acres of habitat respectively. (S3293)

Justify the risk of extinction by not recovering the grizzly bear, listed as threatened under the Endangered Species Act. (F1)(S4364)(S4891)(S4912)(S5051)(S5088)(S5555)(S5763)

What will happen to the grizzly bear living in the area? (S4429)(S4645)

I want proof that this will not risk the extinction of the grizzly bear. (S4431)

Response: Since we are dealing with environmental factors that are not fully understood, it is impossible to 'prove' that there is no risk of extinction for the grizzly bear. The best and most recent science has been used to minimize the risk level and determine probable effects. Compliance with the U.S. Fish and Wildlife Service (USFWS) Biological Opinion reduces the risk of extinction. The analysis does not indicate that the grizzly bear will not be recovered (see USFWS Biological Opinion in Appendix E).

The effect to black and grizzly bears are shown in Chapter 4 in the Biodiversity and the Threatened and Endangered Species sections respectively.

8. *As stated on page 1-11 of the Supplement, if USFWS determines that the preferred alternative would jeopardize the continued existence of threatened or endangered species or result in the destruction or modification of critical habitat, it must offer a reasonable and prudent alternative that would, if implemented, preclude jeopardy. Will this mitigation plan preclude jeopardy? (S3466)(S3958)*

Response: The determination of jeopardy or non-jeopardy is disclosed in the USFWS Biological Opinion, as will reasonable and prudent alternatives. The Biological Opinion is found in Appendix E. The USFWS determined that the project as defined by Alternative V is likely to jeopardize the continued existence of grizzly bears in the CYE. The USFWS believes implementation of the reasonable and prudent alternative would avoid jeopardy. Further, the USFWS believes implementation of the reasonable and prudent measures are necessary and appropriate to minimize incidental take of grizzly bears (USFWS 2001). Substantive changes in the mitigation plans for threatened and endangered species have been incorporated into the EIS. Minor changes would be incorporated through the Record of Decision should a decision to permit be made.

9. *If the FS were taking all practicable measures to protect fisheries and wildlife habitat, in addition to upholding the Endangered Species Act, the implications for grizzly bear would prohibit this project from being developed. As discussed on page 4-123, this project would result in a reduced habitat carrying capacity which may result in disruption of normal grizzly behavioral patterns, including breeding, feeding or sheltering. It goes on to say that since the effects to grizzly bear and its habitat cannot be fully mitigated, the biological assessment determination is may adversely affect the grizzly bear. (S3466)*

I find these impacts to be extremely significant. Habitat is already less than effective (according to the SDEIS, 3-74), so the project, if approved, would be implemented at a time when grizzlies are already struggling in the Cabinet-Yaak. Add to this the SDEIS evaluation that through direct and indirect travel barriers, mortality, and overall disruption caused by both the Asarco and Montonore mines running simultaneous (an estimated reduction in 22.2 % of the grizzly recovery zone, 4-124) the grizzly bear might be adversely affected, I am lead to believe that chances of adequate recovery of the grizzly bear in the Cabinet-Yaak ecosystem will be imperiled by the approval of the Asarco project. (S4060)

Response: The Biological Opinion issued by the USFWS provides the terms and conditions and reasonable and prudent alternatives that would allow this project to proceed. The risk to grizzly bear recovery is disclosed in the USFWS Biological Opinion. All practical measures have been identified and Compliance with the Opinion provides opportunity for recovery. Under the 1872 Mining Act, the applicant has statutory right to develop the ore deposit. Under the Organic Act of 1897, the Forest Service can regulate surface impacts of mining activities to assure compliance with other laws (i.e. Endangered Species Act) and the Metal Mine Reclamation Act provide the State of Montana authority to regulate mining. So, while reasonable access cannot be denied as long as the project complies with all federal and state laws and regulations, modifications to the applicant's proposal can be required. This gives rise to the different alternatives and the mitigation measures.

10. *We are concerned for the intrusion and degradation of environment utilized by these species to include Grizzly Bear, and Northern Timber Wolf. This is one of the last intact ranges for some of these species and additional loss of habitat may well create a major hole in their habitat. The cumulative effect of this and other human activities, on a landscape basis, is not sufficiently measured by this EIS. (S3536)*

Response: The cumulative effects analysis displayed in Chapter 4 (Threatened and Endangered Species section) uses the current and accepted methodologies.

11. *It appears that even your Alternative V will close the Chicago Peak Road #2741. Claiming that this 4.8 mile road must be closed to protect grizzly habitat is ludicrous when allowing a world class mine to be developed 1,000 feet below. (S3634)*

Response: The Chicago Peak Road (FDR No. 2741) would not be closed for 4.8 miles, but only 1.88 miles (Alternatives III & IV). The closure would reduce open road densities in Bear Management Unit (BMU) 5 and would reduce bear/human encounter chances. Both of these gains, combined with other mitigation measures, would improve habitat quality and minimize mortality risk to grizzly bears in BMU 5. Chicago Peak Road would not be closed under Alternative V.

12. To mitigate the grizzly bear disruption with the Asarco Mine going in on Rock Creek, they have said it will be necessary to close two miles of the Chicago Peak road. It should be possible to waive that requirement because the Orr Creek drainage adjacent to the area has roads that can be closed and grizzly have been sighted there. If grizzly recovery depends on road closures, close the Orr Creek road. There is an alternative route to Engle Peak, an unmaintained trail that could easily be reopened. (S3634)(S3654)

Response: The Orr creek road (FDR No. 2285) would be closed for 1.61 miles as part of the mitigation to maintain habitat effectiveness in Bear Management Unit 6. Under Alternative V, the Chicago Peak Road would not be closed.

13. On page S-18, it states in the first paragraph "The existing bear management standards are not being met in Rock Creek. This statement in itself should be enough to stop serious consideration of a permit for this mine. The increased risk of road-killed deer would increase the potential for vehicle collisions with feeding bald eagles along Montana Highway 200 and the railroad. The potential to lose a member of the existing pair using the lower Clark Fork Valley would delay and thus significantly affect recovery of the species in this area. This project should not be approved. (S3706)

Response: While some bear management standards are not currently being met, mitigation would be provided that would move the area closer to meeting standards. Under the 1872 Mining Act, Sterling has statutory right to develop the ore deposit. Under the Organic Act of 1897, the Forest Service can regulate surface impacts of mining activities to assure compliance with other laws (i.e. Endangered Species Act). So, while reasonable access can not be denied, modifications to Sterling's proposal can be required. This gives rise to the different alternatives and the mitigation measures. Mitigation to reduce and basically eliminate the effects to bald eagles is included in Alternatives III, IV, and V (See Mitigation Plan in Biological Assessment in Appendix B).

14. Address how the proposed mine threatens adverse impacts to habitat for grizzly bears, bald eagles, wolves, harlequin ducks, and pileated woodpeckers. (S3971)

Response: Environmental effects to Threatened and Endangered, Sensitive, and Management Indicator species are disclosed in Chapter 4 (Threatened and Endangered Species and Biodiversity sections).

15. The SDEIS goes on to state that grizzly bear recovery might be delayed for the length of the Asarco project's operation some 35 years and maybe longer. This is totally unacceptable. First, within such an attenuated time frame, any number of environmental stochasticities might arise which, when added to the impacts of the Asarco and Montonore mines, might deal a fatal blow to grizzly recovery. Second, I do not think that the people of Montana or America should have to wait 35 years, with fingers crossed, for grizzlies to begin substantial recovery." Again, I highlight the importance of accounting for cumulative effects and unanticipated environmental variables. (S4060)

Response: Cumulative effects have been disclosed (Chapter 4). Under NEPA and MEPA, reasonably foreseeable events need to be considered, and have been, but analysis of "unanticipated" events is not required.

16. The SDEIS identifies alternatives 2-5 as eventuating in reduced habitat effectiveness, and alternative 2,3 and 4 as being ineffective in mitigation measures. Moreover, how confident is the Forest Service that the mitigating lands being considered (in alternatives 2-5) will really be utilized by grizzly bears and other wildlife in lieu of that land

impacted by the Asarco project? This seems to be a very large premise on which to base the recovery of a threatened species. (S4060)

Response: The mitigation measures follow current and accepted methods. Grizzly bears and other wildlife species are known to use many of the potential mitigation lands. Habitat quality would be maintained or improved on those lands so that continued use could occur. Many of the lands were selected because they provide opportunity for bears to move through and connect to other areas of quality habitat.

17. To the extent that the Cabinet Mountains might serve as a critical corridor with the Selway-Bitterroot ecosystem (and any future grizzly re-introductions therein), any action that might jeopardize the (already depressed) adequacy of that corridor ought to be avoided. This point is echoed in the SDEIS where it states that loss of this habitat may affect corridors between larger blocks of suitable habitat (i.e East and West Cabinets) within the Cabinet ecosystem. It could also affect the linkage between the Cabinet and Bitterroot ecosystems. (4-112). I would also like to draw attention to the case of Marble Mountain Audubon Society v Rice, 914 F.2d 179 (9th Circuit 1990), where the court affirmed the importance of biological corridors in determining the adequacy of an EIS. Corridors warrant a "hard look" when evaluating alternatives, and I would encourage the U.S. Forest Service, in this case, to seriously consider the importance of the Cabinet-Yaak ecosystem as a grizzly corridor. (S4060)

Furthermore, the project has grave implications for grizzly bear populations elsewhere. The Rock Creek area is in a vital corridor for migration to the Selway-Bitterroot Ecosystem. At the present, natural recovery is the default selected alternative for the Selway-Bitterroot. There may simply be no other valid method of recovery. The BA fails to take into account these larger landscape issues, which include connectivity to the Selway-Bitterroot. The proposed mine would severely reduce the chances of natural migration for decades. (S177)

Grizzly bear populations will likely be reduced by the mine. This is not acceptable. The Tribes urge a goal of zero human-caused mortality for grizzly bear in the Cabinet ecosystem. (S2034)

The degree to which the biological corridor (for grizzly bears) between the Cabinet-Yaak Ecosystem and the Selway-Bitterroot ecosystem would be affected by the proposed project and associated human activities has not been adequately addressed. The SDEIS adequately addresses the project's expected effects on grizzly bear habitat within the Cabinet Wilderness. The SDEIS even mentions that the project may affect corridors between the Cabinet and Bitterroot ecosystems and that an evaluation of the linkage potential is being carried out by the USFWS over the next five years. However, stating that it may have an effect and that it is being looked into by USFWS is not adequately addressing the possible effects and will not allow the alternatives to be properly compared. If this issue is not adequately addressed I believe the USFS would be in violation of the NEPA because it would have failed to fully consider the project's effects. In this case, because the project may effectively block a biological corridor for grizzly bears, effects could have major consequences for the viability of grizzly bears in northwestern Montana and northern Idaho. Clearly the issue is of a significant nature and deserves to be more adequately addressed in the final EIS. A population viability analysis should be conducted for bears in both ecosystems (assuming bears are allowed to colonize the Selway-Bitterroot) for each of the five alternatives. (S4905)

Response: The effects analysis (see Chapter 4, Threatened and Endangered Species section) recognizes and analyzed the Cabinet-Yaak as a grizzly corridor. Additional analysis is included in the final EIS to better reflect the indirect effects of increased residences in the movement corridor between the Cabinets and the Selway-Bitterroot ecosystems (Chapter 4 Threatened and Endangered Species section). A population viability analysis of grizzly bears in the Selway-Bitterroot ecosystem is beyond the scope of this project. NEPA and MEPA require disclosure of effects. These statutes do not set decision-making standards. The Endangered Species Act ultimately determines under what conditions the bear may or may not be affected. A 'hard look' was given to this habitat component, the biological corridor for grizzly bears, and is documented in Chapter 4, the Biological Assessment, and the project Analysis File on file at Agency offices.

18. Grizzly bears, as a threatened species under the Endangered Species Act, are used as a management indicator species by the Kootenai National Forest for purposes of protecting the forest's bio-diversity as required by the National Forest Management Act. It seems obvious to me that, since alternatives 2-5 are all predicted to constrict grizzly bear movements on a north to south habitat corridor and, therefore, reduce the viability of the population of grizzly bears inhabiting the entire Cabinet-Yaak Ecosystem, The USFS would be in violation of the NFMA's mandate to protect bio-diversity by maintaining viable populations of vertebrates if any of the action alternatives are approved. Additionally, it seems to me (regardless of what the USFWS decides) that it would be difficult to classify grizzly bear mortality occurring under action alternatives 2-5 as "incidental take" when each alternative is expected to have a negative effect on one third of the grizzly bears in the Cabinet-Yaak Ecosystem and would, therefore, significantly reduce the viability of the population in the entire ecosystem. Finally, all five alternatives show BMU's 4 and 5 to have less than the 70% Minimum Acceptable Habitat Effectiveness" (see Table 4-27). This would seem to indicate that USFS is violating their own standards for maintaining the viability of the grizzly bear in the Cabinet Mountains regardless of whether a mine is allowed to be built or not. If this is the case the problem clearly needs to be addressed. If the other methods of determining the quality of grizzly bear habitat (Percent Core Habitat" or Moving Windows Route Density) are going to be used then minimum acceptable standards should be included, and adhered to, for each of them. (S4905)

Response: The U.S. Fish and Wildlife Service (USFWS) Biological Opinion in Appendix E provides the determination on "Take" and "Jeopardy." The Interagency Grizzly Bear Committee (IGBC) has assigned the responsibility of determining potential new standards for core and road densities (as determined by moving windows analysis) to the Selkirk-Cabinet/Yaak Ecosystem Sub-committee. They have not determined what, if any, the new standards would be.

19. Require that all mitigation land be acquired before any mining operation begins. (S4910)

Implementation and measurement of success of proposed mitigations for grizzly bears, bull trout and other threatened and endangered species could be done prior to impacts, significantly avoiding impact and jeopardy to already fragile populations. (S188)

Response: Mitigation is scheduled based on project activities to be done during a given year. All mitigation would be in place prior to full operations starting (see mitigation plans in Chapter 4 and the Biological Assessment in Appendix B).

20. The impacts to the grizzly bear are unacceptable and would violate current laws by affecting the viability of the local populations. (S5484)

Response: The viability of the grizzly bear population is addressed in the USFWS Biological Opinion, which is based on the recovery plan that establishes the habitat needed to maintain viability. Compliance with the Biological Opinion would ensure compliance with current laws (Endangered Species Act, National Forest Management Act) affecting threatened and endangered species.

21. The proposal for mitigating potential effects to bald eagles from increased traffic and road kill on Rock Creek Road - to remove carcasses from the roadway would certainly be helpful. However, it is very doubtful that this activity would occur over the lifetime of the project unless this is a requirement of the permit, with specific consequences for not doing it, as with all of the other mitigation factors designed into the EIS. (S5484)

Response: The mitigation measures would be requirements of the USFS permit if Alternative V was selected by the decision makers.

22. Would road densities affecting elk and grizzly bear be maxed out by the permit and eliminate other management options? (S5484)

Response: Since road densities are at or above the standards, any additional activities that result in opening of closed roads or construction of new roads would require equal amounts of roads to be

closed elsewhere in the area. Other management options are not eliminated, but they may be more difficult to initiate due to existing conditions.

23. *The project does not adequately address the loss of grizzly bear. (S5777)*

Response: The effects to grizzly bears are identified in Chapter 4 and follow the currently accepted ways of showing impacts to this species. The best and most recent science was used to determine effects to grizzly bear.

24. *The grizzly bear reintroduction program of the early 1990s failed. The bear died and generally did not seem to do well. I never agreed with the theory that grizzly bears were shy and avoided roads and people in general. Bears in Alaska do not exhibit this behavior. The one radio collared transplanted sub-adult female ran all over the place before she died up Libby Creek. Bear reports were part of the daily local radio programing. Have her journeys, many across Highway 2, been documented and published? How about the rest of the radio collared bears, and if not why not? I suspect the research does not support the view of the researchers; yet. The Rock Creek project is being asked to mitigate for the "potential bears" that may be bothered by the project based on habitat units and other subjective mumbo jumbo. This precedent was set with Montanore and I realize is tied back to the Threatened and Endangered Species Act. However, pointing at precedent and a skewed interpretation of laws does not make a biological fact. How does requiring a company to place private land in trust with the federal government create a benefit to a non-existent bear? This type of mitigation is extortion based on a convenient interpretation of a bad law. There have been many successful challenges to other interpretations of the T & E Act. Will this extorted land be returned if it is found the bears don't use it or if a court finds this type of mitigation is inappropriate? (S6551)*

Response: The augmentation program of the 1990s was not a failure. Only one transplanted bear is known to have died. The other three females remain in the ecosystem. The wide movements of the female mentioned are due in part to exploration of a new area to establish a new home range. Once established, the movements were within the normal range for bears in the Cabinets. Movements of the transplanted and the resident bears have been published in the annual reports (Kasworm et. al. 1990-1994) on the Grizzly and Black Bear study in the Cabinet/Yaak Ecosystem. The grizzly bear recovery plan requires maintaining sufficient habitat for a fully recovered population, even though the total population is not present at this time. Providing sufficient habitat for a fully recovered population allows the dispersal of young into their own territories and promotes the achievement of recovery goals.

25. *Asarco totally ignores the mitigation to threatened and endangered species, as required in a proper EIS. (S6603)(S6658)(S6659)(S6667)*

Response: A mitigation plan is in place (see Biological Assessment and Biological Opinion in Appendices B and E respectively).

26. *We also noted the distant and indirect consequences mining in the Cabinets would have on adjacent areas, such as the Flathead Reservation community. Examples of these long distance, long range effects would be impacts on the existing population of grizzly bears in the Cabinet Yaak system. Direct impacts on these threatened animals have been acknowledged in the documents outlining the mining plan. But we believe a further and equally tragic consequence would be the genetic damage to neighboring populations, such as the Mission Swan bears, if losses in the Cabinet bears are sustained and migration routes are blocked by mining. (S6739)*

Response: The connectivity of the Cabinet/Yaak ecosystem with the Northern Continental Divide ecosystem (includes the Mission and Swan Mountains) is beyond the scope of this project. The areas that provide the connections are outside the impact area of this project.

27. *Page 120 (Grizzly Bear): We are concerned about the loss of 483 acres of grizzly bear habitat, and the reduction in habitat effectiveness on 7,004 acres and 6,428 acres during construction and operations, respectively, due to the Alternative V. The biological assessment indicates that the project "may adversely affect" the grizzly*

bear and its habitat, and thus, reduce habitat below the minimum considered necessary to achieve recovery and insure survival of the grizzly bear. This loss of a threatened and endangered species in an area that has been judged as critical to recovery of the species would appear to be unacceptable, and to be adequate justification for denial of a mining permit. The existing environmental baseline in the affected Bear Management Units (BMU's) may be insufficient to meet the needs of the bear due to the proximity of other approved and/or ongoing Federal projects. Analysis performed by the U.S. Forest Service and presented in the biological assessment (Appendix B) indicates that the consequences of implementing any of the action alternatives will reduce the amount of available space and/or habitat remaining in the affected BMU's below the minimum considered necessary to achieve recovery and ensure survival of the grizzly bear. In addition, the proximity of other long-term Federal projects to the ASARCO's Rock Creek mine cumulatively may significantly restrict normal bear movements in the Cabinet Mountains and thereby reduce the availability of seasonally important habitats, compromising breeding, feeding, and sheltering of the bear in the affected BMU's. Pursuant to section 7(a)(2) of the Endangered Species Act, as amended, the Forest Service should initiate formal consultation with the FWS. The FWS will continue to work with the Forest Service to explore additional alternatives and/or mitigation measures to reduce, minimize and/or eliminate these impacts to the grizzly bear. (S146)

This loss of a threatened and endangered species in an area that has been judged as critical to recovery of the species would appear to be unacceptable, and to be adequate justification for denial of a mining permit. In cases of this kind, Section 7 of the Endangered Species Act requires consultation with the Fish and Wildlife Service, which then is required to render a jeopardy opinion concerning the possible threat to the species. However, there is no indication in the SEIS that such a jeopardy opinion has been rendered. This appears to be a critical deficiency in the SEIS. (S5130)(S971)

Has a biological opinion been formulated yet from FWS? How has the FWS responded to Asarco's biological assessment? (S3655)

Response: Informal consultation has been on going during the project analysis. Formal consultation has been completed and is documented in the U.S. Fish and Wildlife Service Biological Opinion in Appendix E. The information will be used in making the final decision and documented in the Record of Decision. The Biological Opinion contains the decision regarding the "Jeopardy" determination. The USFWS determined that the project as defined by Alternative V is likely to jeopardize the continued existence of grizzly bears in the CYE. The USFWS believes implementation of the reasonable and prudent alternative would avoid jeopardy. Further, the USFWS believes implementation of the reasonable and prudent measures are necessary and appropriate to minimize incidental take of grizzly bears (USFWS 2001).

Denial of the mine permit is not possible as the applicant's has statutory rights to develop the deposit under the 1872 Mining Act. However, under the Organic Act of 1897 the Forest Service can regulate surface impacts of mining activities to ensure compliance with other laws (i.e. Endangered Species Act). So, while reasonable access can not be denied, modifications to the applicant's proposal can be required. This gives rise to the different alternatives and the mitigation measures. Changes to the agencies mitigation plans were incorporated into Alternative V in the final EIS as a result of the requirements in the terms and conditions in the Biological Opinion (USFS KNF 2001a).

28. Bald Eagle; Upon review, several questions arise. NEPA requires careful analysis and documentation of current knowledge and, when necessary, original studies to evaluate impacts. It is not enough to state unsupported conclusions or findings without adequately describing the studies (without details sufficient to judge the scope, design, methods and statistical analysis of data) or the documents used to reach such conclusions. The survey(s) to establish use by the eagle are not appropriately described as per duration, design or anything else. The proposed mining operation is a major one involving much activity, noise and other disturbance that can probably be detected for miles around, and it will continue for more than 30 years. The long term effects of all activities, especially the

pollution of the Clark Fork River by heavy metals, nutrients, etc. have been inadequately considered regarding the bald eagle, and the finding that the proposed action ``is not likely to adversely affect the eagle is not justified. (S6681)

Response: Survey designs are documented in the original baseline study reports. The finding of 'not likely to adversely affect the eagle' is based on many factors (see Biological Assessment in Appendix B). The level of risk of any adverse impact is a primary element in make the final determination. Based on the very low likelihood of heavy metals reaching the bald eagle food sources, the 'not likely' determination was made.

29. Peregrine Falcon: As you point out in the assessment, attempts are being made to reintroduce peregrines near the site of proposed action. An operation as large as this one is likely to be will generate enough activity to impact the area for miles around. Yet, in your assessment and statement of findings, you failed to properly consider the reintroduction or potential for natural reoccupancy. When dealing with a threatened or an endangered species, these must be considered. Hence, your finding is not appropriate. In your brief statement on potential measures for mitigating adverse effects, you propose to restrict activities between Feb. 1 and Aug. 31 each year. I assume that you are serious in this recommendation, that Asarco is willing to accept it, and that it will be included as a condition for the permit. (S6681)

Response: The timing for restriction of activities is identified for use if a peregrine falcon nest site is found within one mile of the project. The best natural re-occupancy sites are further than one mile from the project area. An additional reintroduction site would not be planned as there is already a site just down stream (in Idaho). If the restriction is included in the permit as defined by the Record of Decision, Sterling would have to comply with it; it would not be optional.

30. Gray Wolf: As with the first two species, the finding of ``not likely to adversely affect the gray wolf'' is based largely on the absence of ``confirmed'' sightings and den sites. Aren't you ignoring the concept of endangered species right from the get-go? If there were many sightings the species most likely would not be endangered in the first place. Society is trying to restore the wolf to its native habitats. Thus, any reasonable assessment is going to examine the historical occurrence of the wolf and the available habitat, plus the potential of restoring habitat. This has not been done in this assessment. Nor has the location of the mine under and adjacent to a roadless wilderness area been given consideration when assessing the impact on the wolf (and other species). Hence, I find the assessment quite superficial regarding the gray wolf. It should not be accepted in its current form. NEPA was enacted to provide a measure of environmental protection from poorly conceived and/or selfish acts by elements of government and society. It must be taken a lot more seriously than is apparent here. (S6681)

Response: Historical information is the basis of the Wolf Recovery Plan, which established the wolf recovery areas. The project area is outside the identified recovery area for wolf (see Gray Wolf Recovery Plan as referenced in the Biological Assessment in Appendix B).

31. Grizzly Bear: Unless evidence is presented showing that a serious attempt was made to locate den sites over the entire Rock Creek drainage (i.e. watershed), the statement on page 15 about no known den sites is meaningless and must not be accepted as evidence of anything. The assessment indicates that the bear use on over 7000 acres would be influenced by the mining operations. This estimate is based on distances of ¼ to ½ mile from disturbed sites and travel routes. While the estimate of 7,000 acres is very substantial and should be enough to raise serious questions about the wisdom of this project, the distance of influence should be substantially more than ¼ to ½ mile. This is especially true when the constancy of the disturbances (24 hrs/day, 364 days/yr) is considered. When the road through the Canadian Rockies (Nat. Parks) was widened approximately 30 years ago, many of the bears were disturbed enough to leave the Parks entirely. If the distance of disturbance was expanded to 1 or 2 miles in this assessment the acreage impacted would be 20,000 - 40,000 acres. Such a figure is more realistic than the estimate given in the assessment, and it should be quite frightening to that portion of the public who care about the survival of grizzlies in the lower 48 states. I do not accept the statement on page 27 that denning habitat is not adversely affected. You have not presented reasonable evidence that there are no dens in the impact area, the impact area as

you define it is too limited, and you do not consider that the grizzly bear management program is designed to recover the population to a sustainable level. In other words, you have ignored the habitat that could be used by the recovering population for denning. This is totally unacceptable when dealing with a threatened or endangered species. Last, I cannot accept the so-called habitat loss mitigation; it will have little or no positive effect on the bears. Statements as to the removal of deer, elk, moose, etc., that have been run down by vehicles before the bears can eat them are repugnant and further indicates the extent of environmental degradation that is associated with the proposed mine. There is reference to a Mitigation Plan on page 30 that is supposed to be in place "prior to the start of the Asarco Rock Creek Mine." I believe that we should be able to review this Plan before acceptance of the Sup. DEIS and that the plan should be a condition of the permit itself, if there is to be a permit. (S6681)

Response: The distances for disturbance to bears were taken from current research and follow the accepted scientific methodologies for analysis and disclosure of effects. Research by Kasworm, 1994 (referenced in Biological Assessment) define grizzly denning habitat. Applying that definition to the Rock Creek drainage shows that the impact zone of the project does not extend into suitable denning habitat. Additional information from the USFWS grizzly research (Kasworm) shows there is one grizzly den in the Rock Creek drainage, however, that den site is outside the direct influence zone of the proposed project. An analysis of indirect effects from estimated recreational increases, due to the project, has been added and shows some indirect effects on denning habitat. The mitigation plan is found in the Biological Assessment in Appendix B.

32. As indicated in the SDEIS grizzly bear analysis, the project will be in violation of Forest Plan Grizzly Bear Management Standards and Guidelines as well as more recent agreements with FWS and IGBC access management guidelines concerning open and total road densities, retention of core areas, and the disposition of displacement areas. The project has the potential to have profoundly adverse impacts on the bear, not the least of which would be the fragmentation of the only known travel corridor between the Cabinet/Yaak and the Bitterroot/Central Idaho ecosystems. The only viable travel corridor between the two ecosystems is located at Noxon Rapids. It is the only corridor without substantial barriers to migration and has been an established route for migration for 50 years. Radio-collared grizzly bears have been sighted using the Noxon Rapids corridor. Numerous other wide-ranging wildlife species, such as elk, lynx, mountain goats make regular use of it as well. (J.Jonkel, MFWP, pers. comm.)

The disturbance associated with the mine may eliminate wildlife travel through the Rock Creek drainage to reach the corridor at Noxon Rapids. In addition the influx of people and human development in the area that will inevitably ensue as a result of the mine is likely to create barriers that wildlife cannot or will not cross. These impacts are likely to interrupt historical migration patterns and eliminate some wildlife migration back and forth across the Clark Fork between the Cabinets and the Bitterroot. The potential loss of this important corridor must be considered in the effects analysis in the FEIS. (S805)(S6806)(S1687)(S1851)

Response: The Biological Assessment includes moving windows analysis of open and total road densities as well as core area assessments. There are no agreements on standards for these habitat conditions at this time so there is no violation possible. Displacement area analysis and provision is shown in the Biological Assessment and is in compliance with management direction. The effects to movement corridors are shown in Chapter 4 (Threatened and Endangered Species section) and in the Biological Assessment. The Noxon Rapids 'corridor' is not intact, in fact it already is fragmented by the presence of Highway 200, the railroad tracks, several existing residences and the open space of the Clark Fork River.

33. The grizzly bear recovery plan in the Cabinet/Yaak, though controversial and not without great sacrifice, is working. According to the document, the population is slowly growing. The grizzly population will continue to grow without further land restrictions or the removal of land from private ownership. The 30 years or so that Asarco will operate the Rock Creek Mine is, by nature's standards, a short amount of time. The grizzly bear will continue its recovery without drastic mitigation measures being imposed on the project. If species recovery is to gain more support and acceptance in our communities, it must be demonstrated to us that we are not faced with all

or none propositions. All or none seldom produces solution, only continued controversy and polarizing debate. The Kootenai National Forest and the Montana DEQ have an opportunity to demonstrate that development and recovery can occur at the same time. This attitude will go a long way in ending the polarization of Montana's citizens and will allow further debate and solutions to be reached that produce winning situations for all. (S5835)

Response: The recovery of the grizzly is based on having a complete ecosystem of a size sufficient to support the recovery population level (90 bears). Habitat reductions resulting from this project must be mitigated in order to maintain the functioning ecosystem. That is what the mitigation plan is intended to accomplish. The mitigation demonstrates that it is possible to have development and recovery (as determined in the USFWS Biological Opinion).

34. Page 2-120, paragraph 5, line 4 – Is this correct? If road closures would not reduce the significance of the impact, why do them? Access to the evaluation adit after the development phase will be required only occasionally (access will need to be maintained as this adit will be a designated emergency escape route for the mine). (S5)

Response: The statement is correct. There are other mitigation measures needed in addition to the road closures to ensure maintenance of recovery habitat. Access is maintained to the evaluation adit. Motorized access beyond the adit would not be available under Alternatives III and IV, but access to Chicago Peak would be retained under Alternative V.

35. Page 2-120, paragraph 6, line 2 – The conclusion that there will be increased road-kill deer is unsubstantiated. Train speed on the rail siding will be very low with essentially no possibility of impacts to eagles. (S5)

Response: The statement on impacts from the railroad is not limited to the rail siding but the track line through the area, as well as on MT Highway 200 and FDR No. 150.

36. Page 4-124, paragraph 2 - It is not clear how the impacts and effects of all of the alternatives would be the same as Alt. III. Disturbance and subsequent mitigation for Alt V is very different than the other action alternatives. (S5)

Page 4-187, paragraph 6 – The discussion of regional grizzly recovery is not provided in suitable context. These “may be” comments are mostly conjecture and should be qualified as such. What is the current bear population and projected growth rates? What percentage of the Cabinet ecosystem habitat would be effected by the Rock Creek Project? What effect will current population trends have on the bear? (S5)

Response: The effects analysis has been expanded to clarify the differences. The bear population information is found in Chapter 3 - Threatened and Endangered Species and in the Biological Assessment. The growth rate is unknown, but Kasworm's data 1989-1994 suggests it is very low. The percent of the Cabinet ecosystem habitat impacted is disclosed in Chapter 4, Threatened and Endangered Species.

37. Page 4-124, last paragraph – Asarco and the agencies are currently working on the grizzly bear mitigation package for the project. Areas that need additional work include; (1) cumulative impacts from the Montanore project and the Rock Creek Project are overstated, (2) the conclusion that increased recreational use of the East Fork Rock Creek trail will inhibit grizzly bear movement and add to the corridor effect needs resolution, (3) increased East Fork Rock Creek trail use will be due to the Rock Creek Project, and (4) overall population increases in the area due to the project will increase the overall use of the Cabinet Wilderness area (4-112). The SDEIS shows overall decrease in the population due to the mine (4-127).(5) Would mitigation land requirements be for permanent easements or ownership transfers, or could they be temporary to coincide with the mine life and suitable reclamation timeframe; (6) socially critical road closures (Chicago Peak Road) will facilitate unnecessary hardships on the local population - alternative mitigation possibilities should be investigated to reduce some of the negative feelings about the project based solely on road access issues. B.A: p 30, paragraph 1 section 7 connecting linkage to the Bitterroot system impacts from the project are overstated and not substantiated, especially if there is an actual decrease in the overall population due to the project. (S5)(6809)

Page 4-112, paragraph 1 – The indirect impact/population effect discussed previously is repeated here. (S5)

Response: Additional analysis has been done on the indirect effects of increased recreational use (due to the project) and is included as an appendix in the Biological Assessment. The interpretation of the human population data on page 4-127 of the supplemental EIS was in error. The population would increase due to the mine but at a slower long-term rate than is estimated under the No-action Alternative. The difference is that a higher rate of increase would occur early on, due to the mine, so the rate of increase would be less later. Mitigation would be for a suitable time frame (as determined by the USFWS). Alternative mitigation to closure of Chicago Peak road were considered and Alternative V has been changed to reflect this. Additional analysis has been included on the effects to the linkage to the Bitterroot system.

38. Page 27, paragraph 6 – The conjecture that two operating mines would restrict bear movement to the point of cutting off the lower portion of the Cabinets is not substantiated. (S5)

Response: The physical location of the two mines, plus activities on private lands (Skranak and Harpole) located in the area between the two large mines, would cause displacement of bears. While displacement may not actually cut off the lower portion of the Cabinets, causing even one bear (due to the small bear population size) to change its behavior and movement patterns to avoid going through the active areas may result in future generations not learning to use habitat in the southern end of the ecosystem. Additional analysis has been done on the indirect effects of increased recreational use (due to the project) and is included as an appendix in the Biological Assessment.

39. There is an immediate contradiction in the very first paragraph of the Biological Assessment on page 14 indicating “the population is thought to be old-aged and on the decline” versus “research indicates a very slow increase in the population.” Do we safely conclude that the second comment dated 1996 overrides the first comment dated 1988? (S25)

Response: This contradiction has been corrected.

40. Once again we have a real problem with your depiction of displacement of grizzly bears. With fewer than 20 bears in the Cabinets, there is no lack of space for them. We totally disagree that these bears and their habitat would be directly, indirectly and cumulatively effected in any adverse manner. We must remind you that grizzly bear recovery will take decades to achieve, and that this project will exist on a relatively minute portion of the overall habitat for a very short window of time (3-4 decades) producing only a temporary impact. Why are we mitigating as if it were a permanent, long-term impact. In all reality, the likelihood of this area being needed for grizzly space during the life of this project is, at best, quite remote. By the time grizzlies recover to a sufficient population that requires availability of this area, this project will be completed and the reclaimed land will then be fully available to them. (S25)

Response: Under the Endangered Species Act, space for a fully recovered population is required, not just space for the existing population. Since there are several grizzly bears known to already use this area as part of their home range they would be affected by the project. Displaced bears are not able to teach their young to use ‘lost’ habitat. A bear generation is about 7 years, thus the project impacts extend over 4-5 bear generations. However, it is possible that young bears would “rediscover” the “lost” habitat after mine closure in their search for unclaimed territory.

41. We have placed guidelines into the mitigation proposal to discourage bears from frequenting the area, and then we require ASARCO to mitigate the displacement we purposefully create. This is confusing to a logical mind. We have limited numbers of grizzlies who have ample elbow room. We have provided no flexibility to adjust for displacement if and when it may occur. Why do we have to assume it is a given when it clearly is not? Is this how intelligent scientists operate objective programs?

Many people feel that the flexibility intended or understood in current forest plans for grizzly management has been removed within the consultation process that shuts out the public. We do not agree with nor accept the validity of the application of many hard and fast standards and guidelines for grizzly recovery. Without public acceptance and public support and public confidence in existing standards as applied, why are we considering the imposition of new standards that will further increase restrictions on traditional uses of people?

One of the most frequently mentioned concerns from the Noxon area has been retention of current public motorized access to the Cliff Lake trailhead via the Chicago Peak Road No. 2741, as well as public motorized access on the Orr Creek Road No. 2285. Your recommended mitigation of closing 2.49 miles of these roads will certainly unnecessarily generate negative public sentiment toward this project. When the community learns that these closures are required for grizzly mitigation there could be a major risk of social jeopardy to grizzlies. These areas carry a long tradition for historic use including hunting, fishing, huckleberry picking, firewood gathering, skiing and hiking, etc. At a minimum you should consider seasonal closures, so public access can be retained from late spring or early summer up until hunting season in the fall. Also, snowmobile access should be retained in areas where this has been possible in the past.

Please consider the healthy bear populations in the Yaak. The grizzly has maintained stable numbers and made steady progress there before and after implementation of restrictive management. Many feel these restrictions for grizzly recovery are totally unwarranted in the Yaak. Historically the grizzlies have adapted and coped well with the presence of man and management activities in the Yaak. Why is this evidence never considered in these decisions? Could it be because there are no longtime local residents involved in the closed consultation process that prohibits a common sense, practical perspective from being at the table? We understand that grizzlies are also more broadly distributed in the last ten years. There seems to be no acknowledgment of these positive situations. (S6809)

Response: The mitigation to 'discourage' bears from using areas close to high human activity (e.g. no clover in seed mix) is designed to maintain existing mortality risk to bears, not to keep bears from using the area at all. The 'displacement' is created by the increased human activity associated with the proposed project, therefore mitigation is required.

There are no new standards being applied. New science is being used to display impacts. Existing standards are not being met, so mitigation is attempting to move towards meeting existing standards.

The mitigation for Alternatives III and IV recommend closing 3.49 miles combined on FDR Nos. 2741 and 2285. This mitigation has been changed for Alternative V. FDR No. 2741 would not be closed in this Alternative. While seasonal closures provide additional protection (especially during hunting season), they do not provide appropriate use periods for seasonal habitats.

While the bear population in the Yaak portion of the ecosystem may be in better condition than the Cabinet Mountain portion, they are still all part of the same total population that is listed as threatened under the Endangered Species Act (ESA). The population did not adapt or cope well with man in the Yaak as evidenced by the fact that it was listed under the ESA.

42. *On page 4-187 of the SEIS it states, "Due to the length of the proposed activity (35 years), the loss of a available habitat and reduced habitat effectiveness, the habitat carrying capacity for grizzly bear would be reduced. This effect may be irreversible should the loss of the habitat keep the population potential below a viable level. If the population stays below the viable level, the effect becomes irretrievable without large scale augmentation. Future augmentation may be difficult because bears may not be available for relocation from other areas and relocation costs may increase."*

Furthermore, in a recent article published in the Western News (Libby) on 3/18/98, Wayne Kasworm, bear biologist for the US Fish & Wildlife Service in Libby, reported "Presently grizzly bear numbers are so small in this ecosystem (Cabinet-Yaak) that the mortality goal shall be zero human-caused mortalities."

The proposed Rock Creek Mine, as described in the SEIS, does not meet the intent of the Cabinet/Yaak grizzly recovery zone or protection for the grizzly under the federal Endangered Species Act. (S6312)

Response: The human caused mortality rate in the Cabinet-Yaak ecosystem has been and continues to be zero as documented in the annual research reports by Kasworm. Meeting or not meeting the intent of the Cabinet/Yaak recovery zone as defined in the Grizzly Recovery Plan (USFWS 1993), in compliance with the Endangered Species Act, is established in the USFWS Biological Opinion.

43. The SEIS acknowledges that there could be gray wolves moving through the project area, but does not address the potential that would be lost for gray wolves to move in and occupy the area. The discovery of the Thompson River wolf pack and sightings of wolves in the Bull River area point to the potential for future use of the project area. The proposed project, with its high level of human disturbance and contribution to cumulative impacts, could effectively remove potential habitat for wolves in the Cabinet-Yaak Ecosystem. At a minimum, the ecosystem is a travel corridor for wolves. Increased traffic as a result of the project presents a potential for increased mortality to wolves traveling through the area. Road kill has been shown to be a very large cause of mortality for gray wolves in the Northern Rockies. Increased human use of the area would also increase the risk of poaching. What mitigation, if any, are planned for the Gray Wolf? (S6312)(S2117)

Response: The potential for wolves to move in and occupy the area is small. In comparing the Rock Creek drainage with occupied areas (i.e. Bull and Thompson River) the Rock Creek drainage is narrow and steep and contains no undisturbed meadow complexes that would provide suitable denning or rendezvous sites. While they can use the area for foraging, the project does not significantly reduce this opportunity. There is no specific mitigation for the gray wolf. Those measures designed for the grizzly bear (e.g. road closures) and bald eagle (removal of road kills) would benefit the wolf.

44. Sixth paragraph "The proposed ... alter habitat ..." See Page 1-8, if significant effects results in loss of species viability ...; this indicates the FS should not be able to issue permit because grizzly bear is already threatened - would this lead to re-assessing listing to "endangered?" (S4832)(S4833)

At present, the grizzlies of the Cabinet-Yaak Ecosystem exist as a small, isolated population of perhaps 35, which may already be fractured into Cabinet Mtns. and Yaak Valley subpopulations. The 1993 Grizzly Bear Recovery Plan lists a viable population for this area as 90 animals. The same Plan notes that a recovered population must document 6 females with cubs over a running 6 year average. During 15 years of trapping, federal researchers have caught a total of 18 grizzlies, only 3 were females (with or without cubs), and only one of the females came from the Cabinets. In addition, the U.S. Fish and Wildlife Service has belatedly acknowledged that an uplisting to "Endangered" status is warranted but precluded. We are clearly dealing here with a severely imperiled population, which deserves the most conservative, cautious management the Forest Service can provide.

However, when we examine the Supplemental DEIS, we see that the Forest is surprisingly (and illegally) headed in exactly the opposite direction under all alternatives, including the Preferred Alternative. Page S-14 of the Summary SEIS under Issue 2 tells us that Effects are predicted to impact grizzly bear habitat due to lost and reduced effective habitat (all action alternatives)." On page S-17 we find that habitat directly impacted would be 483 acres, while Additional habitat effectiveness would be significantly reduced due to increased human activity" - 7044 acres during construction and 6428 acres during operation under the preferred alternative (Alt. V). Moving to page S-18 we see that additional road closures would take place under Alt. V but, These additional closures...would not eliminate the impacts nor reduce the significance of the impact on bear recovery. The project would narrow the north-south movement corridor along the Cabinet Mountains resulting in a fragmented recovery area. The result is a potential delay in the recovery of the grizzly bear in the Cabinet-Yaak ecosystem due to the proposed project."

Unfortunately, whether reading the summary or the full Draft Biological Assessment (DBA) we find a litany of biologically unsound, illegal, and unmitigated effects caused by this project. Cumulatively, they not only permit, they require the Forest Service and U.S. Fish and Wildlife Service to turn down this proposal. A sample of project problems that must be considered very carefully include:

As correctly noted on Page 14 of the DBA, "the population is thought to be old aged and in decline (Kasworm and Manley, 1988)." The later claim of "a very slow increase," based on known bears increasing from 10 to 16, simply won't hold up, either scientifically or legally. The vast majority of this "increase" comes from expanded search efforts (as noted), a flaw that was found to be "arbitrary and capricious" in a successful challenge to the 1993 Grizzly Bear Recovery Plan.

As noted on Page 15, "dense sighting clusters" for grizzlies occur in only two locations in the Cabinets, with one being in Bear Mgmt. Units (BMU's) 4,5, and 6 - exactly where this project would occur.

The vast majority of this project lies in habitat designated Management Situation 1 (MS1), which is critical to the grizzlies survival. Under "Management Direction" for the MS-1 the Interagency Grizzly Bear Guidelines state "Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed or eliminated."

Page 17, The Kootenai Forest Plan (USDA, 1987) establishes a maximum open road density (ORD) standard on areas managed for grizzly bear of 0.75 miles per square mile. This same objective applies to each BAA (Bear Analysis Area, emphasis added). On P: 29 we are told, "The ORD standard is met in all active and displacement BAA's. This is simply not true! Table 5 clearly shows that 2 out of 3 directly affected BAA's far exceed the standard as does one displacement BAA. In addition, Table 13 under "Existing Situation" shows that in BMU #5, four of six BAA's fail, and in BMU #6, four of seven fail. The Forest Service tries to further claim that it only needs to meet the standard across entire BMU's, but its own Forest Plan says otherwise.

The DBA notes on Page 19, "Grizzly bear would be displaced from the project area (7044 acre influence zone) during all phases of the proposed project. Displacement habitat would be provided in adjacent BAA's." Upon checking Appendix 5 for Mitigation, however, we find that only 2350 acres of displacement habitat is provided - the remaining 4694 acres are simply written off. The DBA goes on to note that the presence of humans would influence grizzly use" within 1/4 to 1/2 mile of physically disturbed sites and human travel routes." This ignores the work of Kasworm showing avoidance to 914 meters, and that of Mattson demonstrating avoidance of developments out to 4 km (2.5 mi). This mine is a "development" in every sense of the word. Finally, we are told on page 30, While direct habitat loss is mitigated, it may not be possible to achieve "in kind" replacement due to (a) unwilling sellers or (b) insufficient acres available in the disturbed BMU's (on site). It is possible therefore, that USFS will not only fall well short on actual acres, but on the quality of those acres as well, which after all is the only thing bears care about.

A related problem appears on P: 24-26, and in Tables 15-17, where we are told that displacement acres in all BAA's were chosen solely on aspect and elevation. We are also assured that, "This analysis method has been determined to be adequate for a displacement analysis (Kevin Shelly, USFWS, personal comm. 11/19/93)." This suggests that prime bear habitat can be effectively determined by its altitude and the direction it faces. This is of course biological nonsense and we are surprised that Mr. Shelly would attach his name to it - we suggest you consult him again formally in 1998. Grizzlies choose their habitat based on quality and quantity of food and feeding sites, the security of the habitat, the presence of breeding and denning sites, as well as slope and aspect.

Forest Plan standards and guidelines for % Habitat Effectiveness (HE) are >70%. Under the preferred alternative, all three affected BMU's fail this standard in 1998, and 2 of 3 in 1999 (Table 12, P:22). In addition, despite a USFWS Biological Opinion (7/27/95) requiring no net loss of core, until a permanent standard is established, BMU #4 shows a 0.1 reduction in core. Given the failure of the Kootenai to mitigate 4694 acres (7.3 sq.mi.) of habitat

loss in the previous paragraph, and its probable underestimate of avoidance around "disturbed sites and ... travel routes," we have little faith in any of the core figures in Table 18 and strongly recommend the Forest revisit them in light of the best available science.

Many of the above concerns arise from discussions on pages 21-29 where the Draft Biological Assessment details the Forest's 6 Objectives to ensure grizzly recovery. Perhaps most telling is the fact that the Kootenai currently fails to meet all or most of its targets under every single Objective. Problems under Objectives 2 and 3 are particularly ominous and deserve further consideration here, and by the Kootenai.

Objective 2. Manage for an adequate distribution of bears across the ecosystem

Under this heading, the Forest and this project fail to meet Kootenai Forest standards for: (a) minimizing opening size; (b) protecting the viability of movement corridors; (c) protecting seasonal components, particularly spring habitat; (d) open road densities and; (e) providing functional "in kind" displacement habitat (as detailed above). Under Movement corridors" for example, the following statements are made: "The increased traffic level on FDR 150 (2300%) would greatly reduce the effectiveness of the movement corridor between BAA's 7-6-1, 7-5-2, and 7-4-7.... A north to south movement corridor in the Cabinet Mountain portion of the CYE would be fragmented by having two large mining operations active at the same time.... The two active mines would constrict movement and may cut off about 22% of the CYE recovery zone. This leaves a recovery area that is too small to support the desired recovery population. In addition, any grizzly bear....in the south half of the Cabinet Mountains would have a difficult time surviving over an extended period due to the small area of suitable habitat. At a minimum, this construction would affect 31% of the known grizzly bears in the CYE (P: 27).... Connecting linkage to the Bitterroot ecosystem may be fragmented due to additional housing needs for ASARCO employees." (P:30). It should be noted that both this project and the Montanore mine occur at the narrowest construction of the Wilderness where it already is less than one mile wide.

Objective 3. Manage for an acceptable of mortality risk

This is a particularly critical Objective to meet since a population as small as that in the Cabinets makes extinction solely from random stochastic events a definite possibility. The loss of even one breeding female could tip the balance. The DBA notes, "Mortality risk would increase due to the projected increase in vehicular killed deer and elk (up to 86%) that would draw bears to forest road 150. Vehicle traffic is projected to increase 2300% which greatly increased the mortality risk to the bear." Appendix 5 mitigation for the first problem involves moving carcasses 50 feet back from the road, while the second issue will be addressed by developing a transportation plan to reduce mine generated traffic. Nothing is said about implementing the plan, making it mandatory, or who will enforce its provisions. Nothing in either of these "solutions" suggests that either problem will be solved.

The DBA mentions that 50-100 families (160-180 people) are expected to move into the area; a portion will hunt; potential mortality risk to bears increases. We are told that this impact is partially mitigated with the provision of an I&E position that would educate these new hunters on grizzly identification and the laws concerning them. First, families are made up of at least two people, which would make the above number 100-200 at a minimum, with three or four person families giving you 150-300 and 200-400 respectively. Second, providing for an I&E position, unless it is promptly filled, funded and maintained achieves nothing. From our experience with the IGBC, its Subcommittees and the Forest Service, such positions are grudgingly filled and supported.

Throughout the DBA report we see references to the Cumulative Effects Model (CEM) Process that was employed during this analysis - presumably to determine, quantify, and thoroughly account/mitigate for all likely cumulative impacts (Appendix 4, P: 41). Unfortunately, this is not the case, for at least two reasons. First, as you know, none of the recovery Ecosystems has a Grizzly CEM that is up and running, functional, and approved. Second, the Appendix CEM is merely the tip of the cumulative effects iceberg, focusing as it does on simply listing the effects of this project alone in isolation from all others. As such, it is the very antithesis of a true examination of cumulative impacts! Cumulative effects is far more than a cumulative total of acres disturbed by individual project elements. The Kootenai Forest is required in a CEA to look at all factors, natural and man caused, that are ongoing or

reasonably for seeable, and assess the overall impacts on air and water quality, wilderness, transportation systems, social infrastructure, economies, soils, plants and animals.

At a minimum, to adequately address just the grizzly issues, Appendix 4 must consider in detail : (a) the small size of this Recovery Ecosystem; (b) its small, advanced age, declining grizzly population and the genetic, demographic, and environmental perils that implies; (c) the impacts on this Recovery Ecosystem from the Rock Creek, Montanore, and Troy mines acting in concert with all known, or reasonably likely, timber sales, grazing allotment, roading and development; (d) the known impacts that the populations of Libby, Troy, and Noxon have on this Recovery Ecosystem, and the likely additional impacts (specific) that this project and additional use could be expected to generate; (e) the best available science from the CYE/SE, NCDE, and GYE recovery areas; (f) the cumulative impacts of project caused traffic and development, not just immediately adjacent to this project, but along the linear fracture zones of Highways 2, 200, and 56. All of these further fragment the overall Recovery Ecosystem and have direct bearing on the likelihood of grizzly recovery. (S6687)(S1823)(S6689)(S6688)

Response: Under the 1872 Mining Act, Sterling has the statutory right to develop the ore deposit. Under the Organic Act of 1897 the Forest Service can regulate surface impacts of mining activities to ensure compliance with other laws (i.e. Endangered Species Act). So, while reasonable access can not be denied, modifications to the Sterling proposal can be required. This gives rise to the different alternatives and the mitigation measures. Re-assessment to up-list to 'endangered' is a decision of the USFWS. Their position is that is warranted but precluded due to high priorities and limited funding.

While not all of the population increase comes from reproduction, there are verified increases that are the result of reproduction. This research data, in fact, does show an upward trend. The trend is very small, but real according to pers. comm. Wayne Kasworm USFWS with Wayne Johnson, May 28, 1998a.

The cluster of bear locations are not exactly where the project would occur. They fall between the proposed project and the Montanore project.

The existing conditions for the open road density would improve with the proposed mitigation. On ground conditions since the supplemental EIS and the analysis of open road density has been updated for the final EIS (see Threatened and Endangered Species section in Chapter 4 and the final Biological Assessment in Appendix B).

The displacement habitat mitigation acres are correct. Bears are not completely removed from the disturbed areas. Appendix 4 of the Biological Assessment shows how the displacement level was determined.

The displacement analysis does not ignore research data. In fact, Kasworm's data show that habitat components play a major role in determining the distance of disturbance. The 914 meters distance mentioned falls in Kasworm's disturbance zone 2, which was used as expected when habitat components were considered. In addition, 914 meters equals 0.28 miles which falls within the 1/4 to 1/2 mile influence zone used. The greater distances of bear response to human activity are the extremes of individual bears. The analysis includes the majority or average response distances, not the extremes. An analysis has been completed on the quality of the potential replacement acres. Priority for replacement was established, giving higher priority to 'on site' lands than 'off site' lands.

The primary purpose of displacement analysis is to look at two broad scale bear habitat components, spring verses fall habitat and denning habitat. While each of these general habitats are comprised of many individual elements (i.e. avalanche chutes, huckleberry fields, coniferous forest etc.), the broader scale components have been defined using elevation and aspect (Kasworm and Others 1989-1995). Since grizzly bear habitat components are generally spread evenly across the ecosystem, as determined by physiographic features (i.e. aspect, elevation), the use of these features (as a proxy) to determine acres of available replacement habitat is appropriate. Formal consultation was done with the USFWS and the results are documented in their Biological Opinion in Appendix E. The security of the habitat was done and is displayed as percent habitat effectiveness and core.

The core and habitat effectiveness analyzes were updated. New mitigations included in Alternative V would result in no loss of core in Bear Management Unit 4.

The mitigation measures would be part of the permit. The socioeconomic analysis of increased human population is based on actual results from the similar situation at the Troy mine. Family size can range from one to many people, and the Troy mine data was used in part to determine the estimated increases for the Rock Creek project (see socioeconomic section). The I&E position would be fully funded by the applicant or jointly with Noranda should the Montanore Mine be developed concurrently with the Rock Creek project and would be a Montana Fish, Wildlife and Parks position, not a Forest Service position. It would be filled and supported.

While the cumulative effects model (CEM) is not on the computer, the framework is established and was used as part of the cumulative effects analysis process. The effects of this project are not simply listed in isolation from all other activities (see Appendix 7 of the Biological Assessment). The other resources mentioned (air, water etc.) have individual cumulative effects analysis and disclosed the results in Chapter 4.

The recovery ecosystem size was included as part of the analysis on grizzly bears as was the size of the bear population (see Chapters 3 and 4, Threatened and Endangered Species. Impacts of traffic increases on Montana Highway 200 were part of the analysis as well.

45. The SDEIS acknowledges that habitat effectiveness will be reduced outside the CMW due to increased human activity. The document should indicate that habitat effectiveness will also be reduced inside the Wilderness due to the likely increase in human visitation to the CMW. There will also be increased chances of bear-human encounters that could lead to death for the grizzly, especially during hunting seasons when so many of these encounters typically occur.

The SDEIS also concludes that grizzly habitat will be fragmented, that current management is not meeting recovery requirements, and that the proposed mine will further impair the ability to meet grizzly recovery goals. We believe this is a violation of the Endangered Species Act and that no additional impacts to grizzlies or their habitat should be allowed until the recovery of the species can be secured.

The proposed mitigation is inadequate because there will be a net loss from the amount of habitat that is currently available to grizzlies and other wildlife. The required mitigation should not only secure existing habitat (the proposed action), but it should secure and restore potential habitat that is not now available to grizzlies. This "new" habitat would replace the habitat that will be lost due to the mine, resulting in no net loss of habitat. The amount of habitat required for mitigation must take into account not only the acres directly affected by the mine, but also the loss of habitat effectiveness.

The lands used for mitigation must be specifically identified and acquired prior to the start of any mining operation. Monitoring must be in place to gauge the effectiveness of any mitigation effort, and additional measures must be identified in the event initial mitigation efforts fail. In any case, mining should be stopped and reclamation started immediately should the company fail to meet its mitigation requirements. (S6348)

Response: Additional analysis was done on the impacts of increased recreation use to bears in the Cabinet Mountain Wilderness and a new mortality risk analysis was completed (see Biological Assessment in Appendix B). Violation or compliance with the Endangered Species Act is shown in the USFWS Biological Opinion.)

Habitat restoration is part of the mitigation plan. Loss of habitat effectiveness is part of the mitigation effort (see Biological Assessment - Appendix B). Monitoring is planned to ensure effectiveness of mitigation measures.

46. *Page S-18. Is the increased likelihood of roadkill and therefore an increase in the potential for vehicle collisions with feeding bald eagles the only threat to this species from Alternative V? What about loss of habitat? Increase of heavy metals in the food chain? (S3462)*

Response: No, mortality risk due to vehicles is not the only impact. All the potential impacts are identified in Chapter 4 in the Threatened and Endangered Species section.

47. *Page 2-120. Re: grizzly bear mitigation. "Mitigation would be phased in over the start-up period and be in place by the start of full operations." The only mitigation that I can find are road closures, employee busing, and road kill removal. What then does this statement mean? That all roads would be used during the initial construction period? That busing would not begin until full operations? By which project year would the mitigation be in place? (S3462)*

2nd paragraph "Mitigation ... phased in ...". Mitigation should precede habitat degradation. (S4832)(S4833)

Response: The mitigation measures are identified in the mitigation plan (see Biological Assessment in Appendix B) and summarized in Chapter 2, Alternatives Descriptions. Mitigation is required to be done prior to on ground disturbance. The 'phase in' refers to implementing mitigation ahead of each year's activities (i.e. prior to starting exploration adit work, mitigation will be done that is needed to eliminate or reduce effects of this activity). Prior to starting construction of mill site, mitigation will be done that is needed to eliminate or reduce effects of this activity, etc.

48. *Page 2-120. "Migrating peregrine falcons would continue to use the Clark Fork drainage." But how would they be effected under the various alternatives? (S3462)*

Response: Effects to peregrine falcons are shown in Chapter 4.

49. *Though the SDEIS recognizes that there will be irreversible negative impacts to grizzly bears in the Cabinet-Yaak ecosystem the magnitude and potential consequences of those impacts is underestimated. This underestimation gives the illusion that mitigation, through "enlightened" management practices, habitat acquisition, completion of current projects and limitations on future projects, will enable bears to persist in the area. Such efforts may be sufficient if the bear population was stable or increasing and impacts from the Rock Creek project were the primary stresses on that population. This is not the case with the Cabinet-Yaak grizzly bear population.*

The grizzly bear population in the Cabinet-Yaak is, at best, precarious. This population is stressed across the entire ecosystem by continuing impacts from past and ongoing management actions and additional impacts from new development projects, of which Rock Creek is only one, Bears in the Cabinet-Yaak are increasingly feeling the effects of local and regional human population growth. Growth in human population has resulted in more residences within the bear's usual territory and with more humans entering back country areas for recreation,

which increases the probability of bear mortality. The combination of an unstable bear population and deteriorating habitat quality throughout the ecosystem makes the mitigation efforts discussed in the SDEIS inadequate.(S6680)

The SDEIS, furthermore, fails to look at the consequences of deterioration of habitat suitability at regional and population levels. Because the Cabinet-Yaak bear population is very small and potentially isolated from other populations of bears the consequence of the loss of an individual is much greater than the loss of an individual in a larger population where there are potential replacements. At the regional level the Cabinet-Yaak will be an important link in establishing genetic connectivity with larger, more diverse, Canadian populations and re-introduced grizzly bears in the Selway-Bitterroot ecosystem. Such linkage is essential to the long term recovery and persistence of bears in the Selway-Bitterroot and Cabinet-Yaak ecosystems. The regional increase in human population, by itself, will cause a downward trend in these conditions that must be taken into account in the analysis of the environmental impacts of individual projects. (S6680)

Response: Adequacy of the mitigation measures is determined by the compliance with the Endangered Species Act, which is demonstrated through the USFWS Biological Opinion (see Appendix E). Analysis of regional human populations is beyond the decision scope of this project. Population analysis at the county level is included in the analysis.

50. " Takings are assessed at \$25,000 per individual with the specific human bearing responsibility. Does ASARCO plan to provide a fund for its employees to inadvertently "take" bears through roadkills? (S4832)(S4833)

Response: There is no 'fund' planned for Sterling employees that might "take" a grizzly bear. The individual that does this is liable.

51. Is removing roadkills really a viable mitigation for loss of habitat/potential loss of individuals as a result of mining activities?

An argument could be made that removal of deer along the roadways does not mitigate for loss of bald eagle individuals or their habitat as a result of mining activities. Mitigation is avoid, reduce, compensate. "The potential to lose a member of the existing bald eagle pair ... would significantly affect recovery ...". This is important - the eagle is a listed species - the recovery plan guidelines have not been met in the area. (S4832)(S4833)

Response: Assessment to list a species as 'endangered or threatened' is a decision of the USFWS.

The removal of road kills that could become a grizzly bear's or an eagles meal is intended to reduce mortality risk to the bears or eagles from project traffic back down to or near existing levels.

52. 3rd paragraph. How about FS sensitive species - effects to them do not involve potential for listing if habitat or populations reduced? Who is assessing the regional individual populations for potential to upgrade the "listing." (S4832)(S4833)

Response: USFWS has the responsibility to assess and determine if a species should be listed as threatened or endangered. The Rock Creek project would not result in a trend towards federal listing of any Forest Service sensitive species.

53. Page 1-8 3rd paragraph "KNF is required by [ESA] to ensure that ... actions ... will not jeopardize ... or result in destruction or adverse modification of critical habitat?" Has critical habitat in this area been identified for any species - if so will any such habitat be impaired - where in DEIS is this stated? See BA's. "If the significant ..." See BA's and S-17 and S-18 - Should one believe no species viability will be impaired by the project? It is stated in BA that there will be some. (S4832)(S4833)

Response: Critical habitat has not been designated for any species, therefore it can not be impaired.

54. Page 1-15 4th paragraph What is the USFWS role - what is their stance on bald eagle impacts and grizzly habitat loss? Do they have sufficient material to accurately evaluate the project's impacts. Which district/location of FWS is responsible? When is the Biological Opinion due? When is it up for review/appeal? Pg 2-2 Issue 2 This requires FWS involvement in every step.

Page 2-2 Issue 2 - This requires FWS involvement in every step. What is their involvement and has there been an Biological Opinion filed?

Page 4-184 under "T & E Species" "... grizzly bear use in the ... area ... may be delayed for 50 years or more." Is this keeping in line with the ESA? Need USFWS input.

Page 4-187 under "T & E Species" "This habitat loss could further reduce ... to a point ... a viable level of grizzly ... could not be supported." Is this in keeping with ESA to not detrend a species? USFWS response. (S4832) (S4833)

Response: The USFWS's role is to review and ensure the project complies with the Endangered Species Act. This is done first through informal conferencing and then through formal consultation and providing a written response (Biological Opinion). The Biological Opinion provides mandatory terms and conditions and may provide reasonable and prudent alternatives as well as optional conservation measures. The Helena office of the USFWS was responsible for this project. The Biological Opinion has been completed (see Appendix E). The Biological Opinion contains the decision regarding the "Jeopardy" determination. The USFWS determined that the project as defined by Alternative V is likely to jeopardize the continued existence of grizzly bears in the CYE. The USFWS believes implementation of the reasonable and prudent alternative would avoid jeopardy. Further, the USFWS believes implementation of the reasonable and prudent measures are necessary and appropriate to minimize incidental take of grizzly bears (USFWS 2001). The terms and conditions have been incorporated into Alternative V in the final EIS (USFS KNF 2001 a). Through the NEPA process the Record of Decision may be appealed. There has been a representative of the USFWS on the Interdisciplinary Team since the start of the project.

55. Page 2-78 2nd paragraph "Although the securing of private land ..." If road closures are 'mitigation' how do these affect the multi-use component of the FS mandate? Does this mean private people may not be allowed in certain public areas because they are to be used for 'mitigation' (for loss of habitat proposed by ASARCO)? Is the public being punished for loss of habitat for species negatively affected by ASARCO's proposal? If the "'mitigation' would secure sites", does this occur on FS lands where human development is not allowed to occur? This isn't mitigation for loss of species habitat! "Other concurrent mitigation ... would be funding ..." Does this translate to ASARCO paying some groups instead of focusing on avoidance? This is not mitigation in the standard ARC format (Cooper et al). "... inform and educate to the public ..." Does this translate to ASARCO educating the public about how mining activities result in loss of habitat for ESA-listed and FS sensitive plant and animals species? "The reduction of mine-related traffic proposed for inclusion ..." This sentence does not make sense - "mine-related traffic is proposed for inclusion?" (S4832)(S4833)

Response: The mitigation to close roads does not affect the multi-use component of the Forest Service mandate. However, road closures do result in changes in how the public use some areas. Driving a car or all-terrain vehicle to access an area would be replaced by walking, horseback riding, or mountain biking. The identification of 'replacement' acres is not possible until after mitigation is in place (see response to comments earlier in this section). The sentence should read: "The reduction of mine related traffic (as proposed in the Wildlife mitigation plan), and the road closures would also benefit threatened and endangered species such as the grizzly bear."

“Funding” refers to funding an information and education position with the Montana Department of Fish, Wildlife, and Parks either entirely by the applicant or jointly with Noranda should the Montanore Mine be developed concurrently with the Rock Creek Project. The person in this position would help educate local people about threatened and endangered species, sensitive species, how to avoid or prevent or minimize encounters with predators such as grizzly bears, and what actions the public can take to enhance awareness and knowledge about our rarer plant and animal species.

56. Page 2-120 under "Grizzly Bears" ASARCO admits to a reduced "habitat effectiveness" of 7,044 acres. This is a listed species. This is significant. USFWS response needed. 3rd paragraph "Bears could be displaced ..." Does this mean that grizzly-human interactions could be increased? Into Noxon and the Hwy 200 corridor? Will ASARCO compensate for loss of livestock, pets, or small children due to bears being displaced as a result of mining activity?

4th paragraph "The existing bear management standards are not being met in Rock Creek ... the area is not meeting requirements for bear recovery ..." The proposed project "... in further decrease in the grizzly bear standards ..." Is this not considered "jeopardizing the species?" Has an analysis been done on the importance of the grizzly population in NW Montana compared to that of the US as a whole to determine if this impact is severe enough to compromise potential for recovery. Where else in the US is the grizzly population on the rise and recovering (as a mandate of the ESA). USFWS response needed. (S4832)(S4833)

Response: The USFWS has responded, to changes in habitat effectiveness and the other points raised, in their Biological Opinion. Yes, bears being displaced can mean increased human/bear encounters. Displacement location is most likely to be further away from human activity rather than towards Noxon or Montana Highway 200. Jeopardy or non-jeopardy is determined by the USFWS and shown in their Biological Opinion in Appendix E. The Biological Opinion contains the decision regarding the “Jeopardy” determination. The USFWS determined that the project as defined by Alternative V is likely to jeopardize the continued existence of grizzly bears in the CYE. The USFWS believes implementation of the reasonable and prudent alternative would avoid jeopardy. Further, the USFWS believes implementation of the reasonable and prudent measures are necessary and appropriate to minimize incidental take of grizzly bears (USFWS 2001).

57. Page 2-125 last paragraph and first on 2-126. Who picks up the tab for road closures, maintenance of gates, etc. What additional land does the public lose potential for multi-use, when ASARCO needs to find over 2,000 acres for "mitigation." Are the bear already using this >2,000 acre somewhere? Have there been studies to indicate that they have not, and with road closure and conservation easements will bears freely go into these areas and feed and breed? (S4832)(S4833)

Response: Sterling would provide the funds to implement and maintain the road closure mitigation measures. Bears are currently using some of the proposed mitigation lands, while others are not being used for a variety of reasons (including high open road densities). With road closures the lands will be more effective as bear habitat and bear access to the lands would be better due to reduced open road density. Refer to earlier comments on location of mitigation lands.

58. Volume II Draft BA page 10 4th full paragraph How do Troy Mine projections relate to actual discharges with respect to pollutant levels? Last paragraph "An estimated 140 acres ... could be developed ... reducing bald eagle habitat." Then would ASARCO need to produce 140 acres of bald eagle habitat? Along the Clark Fork River? (S4832)(S4833)

Response: The ore body content and the mining process used at the Troy Mine are very similar to those in the Rock Creek situation. The assumption follows that the discharges from Rock Creek mine will be similar to those of the Troy Mine. Sterling would not be required to produce replacement acres for the bald eagle. This is because actual levels of new constructed homes is

unknown due to the actual ratios of hiring locals verses non-residents. The estimated 140 acres of new home construction is an estimated based on the company's goal of 80 percent local hires and would be considered an indirect impact from the project.

59. Page 12 - 1st paragraph - Effective mitigation is removing roadkills. If this is true, what is percentage of food habits is scavenging to fishing? Is this removal of roadkill going to avoid, or compensate for loss of habitat/food supply? "Low risk of long-term effects of heavy metals." Metals are accumulative. Any risk is unacceptable. 2nd paragraph "No additional mitigation required ..." The only 'mitigation' is removal of roadkills? (S4832)(S4833)

Response: The actual percent of scavenging to fishing for food by bald eagles in this area is unknown. However, both are known to occur and higher availability of vehicle-killed animals is known during the winter and early spring months. Removal of road kill is not intended to compensate for loss of habitat or food. It is intended to reduce the mortality risk of being hit by a vehicle. Other mitigations are identified. They include busing employees and piping ore instead of hauling it in large trucks under Alternative V.

60. Page 14 - 1st paragraph - "Mitigation ... should be effective in offsetting the increase in mortality risk ..." Is a mitigation to be considered anything that reduces potential additional loss of ESA-listed species? (S4832)(S4833)

Response: Mitigation is anything that avoids, reduces, or compensates for an unacceptable adverse effect.

61. Page 27- 6th paragraph - Recovery zone is diminished by existing mining activity - the proposed project would reduce the recovery zone and its concomitant recovery goals by even more. This is not permitted under ESA. What about the next project proposal that reduces the grizzly recovery by another 30%? (S4832)(S4833)

Response: The recovery zone and goals remain the same size, however the effectiveness of the area changes. Compliance with the USFWS Biological Opinion results in meeting the Endangered Species Act. The 'next' project proposal would be required to complete its own NEPA analysis and include this project as part of the cumulative effects.

62. Page 46 under #3 "Daily removal ... of [roadkill] carcasses ..." Only after three years of monitoring? How many T & E individuals can be lost before MFWP and USFWS do something about loss of habitat and degradation of food sources (contamination with metals)? Loss of habitat is widely regarded as the most contributing factor to species declines. Not roadkills under #5. "Work with other mines ... to fund ... in grizzly bear conservation." This is ASARCO giving money to say mining disturbs 7,000 acres of habitat, so we (the public) should be more careful with our use of grizzly habitat. (S4832)(S4833)

Response: Removal of road kills would continue from start of the project until the U.S. Forest Service and U.S. Fish and Wildlife Service (USFWS) determined that the mitigation was not needed. The three years of monitoring during full operation refers to how many years of daily monitoring of the numbers of road-killed deer and elk on Forest Service roads in the area and submittal of annual reports would be required from Sterling to document actual impact on these species and potential impact to bears and eagles should the road kill not be removed. The monitoring of mitigation measure effectiveness would be done through Memorandum of Understanding between the appropriate agencies. Measures determined to be 'ineffective' would be modified immediately upon determination of ineffectiveness. The USFWS response to mitigation measures is in their Biological Opinion.

63. Page 47 - under #8. "Clover will not be used during final revegetation." How about during initial revegetation efforts? (S4832)(S4833)

Response: The final EIS changes this to include revegetation during all phases.

64. *Page 3-77 The moving windows BL OT TEST on this page and for 10 pages in Appendix 6 are of little use to the lay public in their layout or their explanation. The general outline of BMU's in figure 3-10 on pg. 3-75 is similarly worthless when it does not overlay a topo map listing various landmarks such as streams, mountains etc. A more perceptible intent of all this fuzzy material is to obfuscate the cumulative effects issue concerning the continued existence of the Grizzly bear and the development of these mines. It is apparent from reading the Noranda / Montanore EIS that mitigation for the Montanore project consisted of the Grizzly bear moving into some of the adjacent BMU's that will now be impacted by the proposed Asarco Rock Creek project. The agencies are ducking the truth on this issue and doing so at their peril .(S614)*

Response: See section addressing Grizzly Bear under Threatened and Endangered Species in Chapter 3 of the final EIS for explanation of core habitat analysis. Detailed maps at more readable scale are available upon request. Displacement areas are not the same (see Appendix 7 of the Biological Assessment in Appendix B of the final EIS).

65. *We must re-emphasize that we take a solid position in favor of retaining full use of public access into traditional recreation areas beyond the mine site for hiking, fishing, hunting, huckleberrypicking facilitated by motorized access along all current open roads to the Cliff Lake trail head (2741) and Orr Creek (2285) and the unnamed road (2741X). We do not approve of any road closures to reduce public access solely to mitigate supposed negative impacts to grizzly bears. This is people control, pure and simple, not grizzly bear management. (S25)*

Response: Grizzly bear researchers such as Kasworm, Mace, and Manley have demonstrated the negative reaction of grizzly bear to human activity on roads. Their current research supports road closures as an effective grizzly bear management tool. Alternative V would keep FDR No. 2741 open. Access to trail heads would be provided, however trail head locations may be relocated during the life of the project (i.e. Trail 932).

66. *How does this project avoid "take" happening to the endangered species? FWS written statement should address that everything is done reasonably, and prudent to protect the species and to conserve listed species. (S3655)*

Response: A taking may occur under the Endangered Species Act with permits issued by the USFS and DEQ. The USFWS Biological Opinion identifies all reasonable and prudent alternatives and mandatory terms and conditions to ensure conservation of listed species. The Biological Opinion also identifies occurrence of incidental take. Changes to the agencies mitigation plans were incorporated into Alternative V in the final EIS as a result of the requirements in the terms and conditions in the Biological Opinion (USFS KNF 2001a).

67. *Lynx would likely be impacted by habitat degradation and loss, fragmentation, and increased mortality, but discussion of impacts to the lynx in the SEIS is very limited. Population data on lynx in the Cabinets are lacking and efforts should be made to collect data on the status of the lynx. In addition, when available, findings from ongoing studies of the lynx in the Yaak should be incorporated. (S6312)*

Response: The impacts you mention for lynx were considered in the effects analysis. Efforts to collect data on lynx status on the Kootenai National Forest, as well as adjacent forests, is ongoing. The best available data, including the findings from the Yaak, were incorporated in the Lynx Conservation Strategy used in the effects analysis.

68. *The Forest Service is using models to estimate the amount of denning and foraging habitat available in the project area. It concludes that habitat is limited, especially in the southern portion of the forest. The Kootenai Cumulative Effects (CEM) Model referred to on page 3-62 appears to be the model deemed most reliable by the Forest Service. What assumptions underlie the model? Has this model been peer reviewed by the general scientific community? (S6312)*

Response: The model can be reviewed as part of the project file, including the assumptions used to develop it. The model was the result of a task force of Kootenai National Forest (KNF) professional wildlife biologists and other professional specialists and was reviewed by lynx specialists outside the KNF.

69. *Even if the CEM model has accurately projected that the amount of suitable foraging and denning habitat is limited, it could be argued that the loss of even a small amount of suitable habitat could have significant impacts on lynx. How much suitable habitat would be lost? Is the Forest Service currently meeting its responsibilities to provide sufficient habitat in its lynx management units to maintain minimum viable populations? If not, then the loss of any amount of suitable habitat due to the proposed mine would likely result in a trend toward listing for lynx. Will habitat mitigation measures be proposed for the lynx? If so, can enough suitable habitat be acquired? Relatively large, undisturbed areas such as the Cabinet Mountains Wilderness Area connected to zones with low road density are necessary to maintain viable populations of large carnivores such as the lynx. (S6312)*

Response: The amount of suitable habitat directly lost by the project is listed in the Chapter 4 effects analysis. The amount of habitat available is only one of the factors in lynx recovery. It was concluded the Lynx Management Unit (LMU) associated with this project was not a major factor. The loss of a small amount of suitable habitat may not contribute to a take if insufficient quantities of habitat are available regardless of project effects. In other words, if 30% foraging habitat is needed within a LMU, and only 5% is available, then the further short-term loss of a fraction of a percent would not make the difference between lynx occupancy or not because it's already insufficient.

The Forest Service is managing its responsibilities on lynx habitat in several ways, including those outlined in Chapter 3 section on lynx. Lynx habitat is a long-term management responsibility because of the dynamic nature of the forest, and because lynx need habitat in both the early and late seral stages. A review of the existing condition of the Kootenai National Forest indicates that some LMU's meet the guidelines established under the Kootenai National Forest's Lynx Conservation Strategy and some do not. This may not necessarily be because of management activities, since stands established decades ago, or burned in large fires, may not be in proportions considered optimal for lynx management.

Mitigation is required only if an effect is expected, and the analysis concluded that the project would not be likely to adversely affect lynx or its habitat.

70. *The CEM model does not address the importance of travel corridors, cumulative impacts from other activities, or direct mortality factors. All these factors-- direct, indirect, and cumulative must be addressed to predict impacts to lynx with any reliability. When analyzing impacts to large carnivores, cumulative impacts become extremely important. The SEIS makes no mention of the Montanore mine, the Fourth of July mine, and Way-Up mine road building proposals, or the proposed Treasure Mountain Ski resort. Wildlife habitat would be fragmented by these proposals, travel corridors would be disrupted or severed, and the cumulative impacts from all these projects would contribute to loss of suitable habitat, fragmentation, and mortality. (S6312)*

Response: The importance of travel corridors, cumulative effects and direct mortality are factors that are addressed in the Chapter 4 effects analysis for lynx. Cumulative effects were noted for those species that would be affected by each of the other factors, and are recorded in the cumulative effects section of Chapter 4. Some of the projects you list were not deemed to have any cumulative effects to the species analyzed in detail, or species in general, so they were not listed in the section.

71. *The large increase of traffic on FDR 150 would lead to increased disturbance and increased mortality due to road kills. On page 4-105 there is a mention of animal-friendly crossings. What would these entail? Would they be similar to Florida's panther crossings? How effective are those? Would this mitigation be part of an operating permit should one be issued? (S6312)*

Response: The effect of increased disturbance and mortality is noted in Chapter 4. Animal friendly crossings would need to be designed into the road specifically for the site. The concept of animal-friendly crossings is relatively new, particularly for small roads such as FDR No. 150, so data on effectiveness is very limited and not very comparable. Animal friendly crossings would be design features incorporated into the transportation plan, a required part of the operating permit.

72. *Poaching of lynx also would likely increase due to increased human use of the area. The loss of even one animal could have significant impacts. Note that in Montana the hunting quota for lynx for the entire state is two animals. (S6312)*

Response: The history of lynx sightings in the area do not support a conclusion that poaching of lynx would likely increase. The risk of mortality would be marginally increased because of increased human use, but the actual likelihood of that occurring would be very remote given the lack of suitable habitat and apparent lack of individuals present.

73. *Given that the proposal to list the lynx as threatened is expected in June, a much more thorough analysis of impacts to lynx is called for. How much more analysis is the Forest Service proposing to do if the lynx is proposed for listing? Will cumulative impacts to lynx be looked at? (S6312)*

Response: The level of analysis depends partly on the extent of impact expected, as well as a species' legal status. The effects analysis determined that lynx were not likely to be adversely affected, and further review pending the legal status change for lynx did not reveal additional analysis to be warranted. Nevertheless, lynx were included in the final Biological Assessment (see Appendix B) as a proposed species. The cumulative effects of this and other projects were reviewed for the supplemental EIS and further reviewed for the final EIS.

74. *DEIS p. 4-91/SDEIS p. 4-89. The information on the lynx has been rewritten for the SDEIS. The importance of trapping risks has been downplayed. The specific wording corrections that were made in the errata sheet were not included in this rewrite. (S3462)*

Response: Errata items were pertinent only to the draft EIS, and many sections were entirely updated making the errata irrelevant. Trapping risks to lynx were considered less of an issue in the analysis for the supplemental EIS than in the draft EIS, although it is noted in the supplemental EIS as well. This was because of the much greater information available for the supplemental EIS on quantity of suitable lynx habitat within the project area and areas affected by the increased human population attributable to the proposed Rock Creek Mine project. As noted in Chapter 4, the number of lynx present historically in the area supports the conclusion of limited habitat availability. In addition, trapping of lynx is under management control of the Montana Department of Fish, Wildlife, and Parks, and seasons can be regulated according to need.

75. *There seems to be some glaring discrepancies between the Draft EIS and Supplemental with regards to the extent and severity of the effects of the action alternatives on wildlife species. These need to be rectified. How could one document state that. The proposed project would result in loss or degradation of lynx habitat... and the other state "Lynx habitat would not be significantly affected.. This is just one example. What evidence is presented in the supplemental for downgrading the effects from significant" to less than significant. (S4922)*

Response: The draft EIS stated that there was inadequate information known about lynx (and fisher and wolverine) within the project area and planning area to make a reasoned determination of effect, and no determination of effect was rendered in the Draft Biological Evaluation. In the supplemental

EIS, it is noted in Chapter 3 that several major advances in information on lynx habitat were made, including completion of a forest-wide habitat assessment and development of a conservation strategy. Research on lynx occurring after the draft EIS, including the Kootenai National Forest population, provided important data to help determine the project's effects. The information used to determine the effects of the project on lynx in the supplemental EIS is presented in Chapters 3 and 4.

TE-501 Aquatic T&E Species

1. We conclude that no further mitigation is necessary to protect the Bull Trout. (S67)(S5813)(S5827)

The SDEIS Summary concludes, All action alternatives would impact resident populations of bull trout and westslope cutthroat trout in Rock Creek. These impacts would be the result of increased sediment loads from road construction and runoff (S-19). Clearly, there is no action alternative that adequately protects and restores these native trout species. Until such an alternative exists, the no action alternative is the only legal option for the decision-maker to choose. (S22)

Potential impacts from additional sedimentation and other water quality impacts may adversely impact fisheries and aquatic life, including bull trout in the Rock Creek drainage. (S146)

The project does not adequately address the potential for loss of bull trout and westslope cutthroat. (S5040)(S5060)(S5069)(S5777)

The Supplemental Draft Environmental Impact Statement (SDEIS) fails to use the best and most recent information about these resources and fails to ensure the long-term viability of the bull trout and westslope cutthroat trout. (S22)

There is no scientifically supportable evidence that the mine will harm the bull trout in Rock Creek (much less the grizzly bear). Even if bull trout in Rock Creek were affected it would have no effect on the general bull trout population of North Idaho or Northwest Montana since the Rock Creek population is isolated by the Cabinet Gorge and Noxon Rapids dams. (S3424)

The proposed Rock Creek mine poses a serious threat to the native bull trout population in Rock Creek. To mitigate this threat, Asarco should be required to reduce existing sediment sources, show that the mine will not violate regional fish habitat protection standards and, use double walled pipelines that are resistant to corrosion with leak detection systems. (S3971)

Can you honestly tell me that the proposed mining operation would not worsen the plight of the endangered bull trout? (S4645)

What about the bull trout? How can anyone justify endangering this small remaining population? (S5122)

The impacts to the bull trout are unacceptable and would violate current laws by affecting the viability of the local populations. (S5484)

Impact on the crucial population of adfluvial bull trout is likely to be substantial, even devastating. Given the current status of the bull trout (truly endangered), any adverse impact must be avoided. Also, given the extent of operations at the proposed mine, it appears to be highly unlikely that adverse effects can be avoided even if Asarco develops a management plan and seriously tries to implement it. The plan must be completed and subjected to critical review by agencies and the public before a permit is issued. There also must be provisions in the permit to suspend operations at the mine if it becomes evident that the bull trout population is being adversely impacted. (S6681)

Response: Alternative V has been revised to include more specificity for sediment mitigation in Rock Creek only, and to ensure protection for aquatic biota in Rock Creek. This, together with many other protection and abatement measures (see bull trout Biological Assessment in Appendix B), will result in greatly reduced adverse effects to bull trout and other aquatic biota. However, increased sediment loading during project construction is still likely to adversely affect bull trout individuals. There is a high likelihood that all protection and mitigation measures will result in an improving

trend in aquatic resources over the life of the project absent a catastrophic or accidental event. The effects analysis takes into account fish behavior and environmental variability. Please see Chapter 4 Aquatics/Fisheries for the updated analysis of effects.

Revisions to Alternative V now protects the Rock Creek bull trout subpopulation. The decision documents alone, for this final EIS, would not allow Sterling to immediately begin mining - the applicant must submit a number of additional highly detailed operating plans that conform to the final EIS requirements. In other words, the decision would specify the conditions that must be satisfied by the applicant, and the operating plans provide the operating rules under which the project will be administered. The law provides for suspension of activities if the project, impacts or monitoring results are out of compliance with the administrative and regulatory conditions.

2. *The SDEIS contains no tried and dependable science to neutralize the inherent risks that the process of mining brings to bull trout. (S6629)*

Response: The Agencies have examined every conceivable outcome of the project, identified those effects that are likely and specified mitigative and protective measures to avoid or minimize them, and acknowledged that a few unforeseeable events do pose a limited risk that cannot be eliminated and is greater than the outcome of No Action. In some cases, the Agencies relied on best professional judgement in instances where a strict quantitative evaluation was not possible.

3. *Scientists have found genetically-pure populations of westslope cutthroat trout in the Rock Creek drainage. In addition to permanent, resident populations, there is also evidence of bull trout migration from Cabinet Gorge Reservoir into Rock Creek for spawning. Existing sediment levels, however, are high and potentially impact spawning areas in the RC-2 reach.*

The anticipated habitat degradation from the ASARCO mine could result in non- native fish gaining a competitive advantage over native bull trout and westslope cutthroat trout. The increase in sedimentation due to the mining activities was not quantified or fully analyzed. Potential future reductions do not mitigate the sediment impacts to native fish.

The SDEIS states, Although Alternative V contains a requirement for implementing a sediment source identification and reduction plan, the lack of specific mitigation meant that the effects of this mitigation could not be quantified and incorporated into the WATSED model (4-74). Why is there no specific mitigation plan? How will the public be able to comment on the effectiveness of this mitigation plan. We are concerned that many of these planned mitigation measures will not have public or scientific review.

Page 4-74 of the SDEIS states: "However, since very little spawning habitat is available, and available gravel in mainstem Rock Creek already contains a high level of fine sediment, any short-term increase in the percentage of deposited fine sediment in these spawning substrates would further reduce survival to emergence and potentially contribute to elimination of resident fish populations. To the limited extent that migratory bull trout are present in Rock Creek, reduction in spawning success in Rock Creek could also impact fish populations in Cabinet Gorge Reservoir." Such impacts are not allowable. (S22)

The Cumulative Effects of the Existing Poor Condition of Fish Habitat Combined with the Inevitable Impacts of Mining Activities will Adversely Affect Bull Trout in Rock Creek. It is abundantly clear from the BA's description that fish habitat in Rock Creek is currently in a degraded condition. An excess of fine sediment and a lack of large woody debris is already limiting spawning and rearing of bull trout in the main stem of Rock Creek.

A new bridge will also be constructed on the West Fork which will provide a crossing for the slurry, discharge and other pipelines in addition to the access road. Although the BA makes light of the potential impacts of the bridge

construction ("minor, short term impacts") there is a high probability of additional sediment delivery as well as the risk of a spill that could impact downstream fisheries. Under Alternative V, 1,000,000 tons of waste rock will be deposited at the confluence in order to create the mill site. (SDEIS at S-6) It is highly questionable whether a 300 foot buffer will suffice to reduce (to a negligible amount) sediment and other detrimental material that will be delivered to the Creek from this massive relocation of earth and rock.

The BA places very low emphasis on the potential impacts of the extensive project related construction and reconstruction of roads and corridors for pipelines and powerlines. According to the SDEIS there will be 3.99 miles of road construction and 15.91 miles of road reconstruction. (SDEIS at S-2, S-6, S-7) In addition, miles of corridors for pipelines will need to be cleared and excavated. Additional miles of clearing and grading will take place in order to construct a corridor for the 230 KV powerlines.

The 6 inch diameter 8.5 mile long pipeline from the exploration adit to the mill site follows roads #2741 and #150 for part of the distance, but also goes "cross country" for more than a mile in section 34 and sections 3 and 10. (SDEIS at S-6) This pipeline corridor and road reconstruction up the West fork involves stream crossings at several tributaries to the West Fork. There is a high risk of substantially increasing sediment delivery to the stream during reconstruction of existing crossings and excavation for the cross country portion of the pipeline. Sediment delivery from these sources may continue long after construction is finished and should not be downplayed.

All in all this will require approximately 100 acres of surface disturbance (SDEIS at 2-21 Table 2-2, total Surface Disturbance Acreage for Alternative V = 481 acres - the tailing impoundment acres (368 acres) = 113 acres) The impacts of the above described clearing and excavation for roads, pipelines and powerlines with associated stream and tributary crossings are likely to be much more severe than the BA implies. The inevitability and magnitude of sediment delivery and nutrient loading to Rock Creek and its tributaries are not adequately addressed in the assessment of impacts on water quality and fish habitat. (S805)(S6806)(S1687)

Alternative V is the new preferred alternative in the SDEIS, and calls for more stringent BMP's and protective measures than any of the other action alternatives. In spite of these improvements, the SDEIS and the biological assessment continue to indicate considerable risk to bull trout habitat as a result of sediment generated from mine development. Our analysis of the SDEIS leads us to believe that none of the action alternatives will provide adequate protection for water quality and therefore bull trout habitat over the long term. We concur that the storage of tailings in a paste will likely reduce risks associated with a tailings impoundment failure and reducing the potential for a slurry pipe failure reduces overall risks. We remain concerned that development of the mine will diminish the suitability of Rock Creek for spawning and rearing of adfluvial fish, particularly bull trout. Habitat protection and mitigation plans are not described in enough detail to determine if they will reduce or offset the negative impacts identified in the SDEIS. (S4711)

Addressing the following deficiencies in the DEIS and SDEIS is necessary to adequately assess the impacts of the proposed mine on the fishery resources: Development of a detailed plan to reduce sediment delivery to Rock Creek resulting from mine development and operation. The plan should include a description of the methods to be used and where, when and under what circumstances they will be used. Development of a detailed plan to mitigate for sediment delivery to Rock Creek. The plan should describe the location and type of mitigation, and estimates of how much the sediment load will be reduced by implementation of the mitigation proposal. Provide detailed maps and a description of the riparian and flood plain buffer zones and the location of roads and other construction in the flood plain. (S4711)

Implementation of the following recommendations are necessary to reduce the risk to the fishery resources: The sediment reduction plan must reduce sediment delivery to Rock Creek to a level that does not significantly impair the ability of the stream to provide spawning, rearing and migration habitat for salmonids, and particularly bull trout. The storm water collection and management system must be designed to withstand a 100 year event without significantly increasing peak flows. Construction or disturbance in the riparian zone and flood plain must be

avoided and fully mitigated where impacts are unavoidable. Conduct watershed restoration activities and implement sediment reduction measures prior to mine development. Monitor the effectiveness of sediment control and reduction programs, and be prepared to add BMP s and or terminate sediment producing activities if sediment levels increase. (S4711)

Clear, detailed sediment loading is not addressed in the SDEIS. The generalized statements of utilizing unspecified BMP s to reduce or eliminate sediment impacts are inadequate for a 400 - 600 acre project.

Identifying unspecific sediment reduction practices in other watersheds does not offset the impacts to Rock Creek fish populations and appears to be a concession that significant damage to fish habitat from sediments will occur from the project development and operations. (S1417)

Page S-20 1st paragraph However, under " ... the identification and reduction of existing sediment sources ..." This is not mitigation for ASARCO's impacts. "The possible reduction of sediment sources ... could improve..." Again (1) 'possible' reduction, 'could improve' - this is not mitigation for reduction in species numbers due to habitat degradation because of actions undertaken by ASARCO. (S4832)(S4833)

Several references are made to a mitigation plan for both Rock Creek and Bull River, but there is no detailed description of the plan. The DEIS states (pp.2-78, 2-118) that mitigation plans would be required to address maintaining populations of sensitive fish species in Rock Creek and to reduce sediment in spawning gravels. No plans are provided in the DEIS, suggesting that plans would be developed after a decision was made on the DEIS. Without full analysis and disclosure of what benefits might be derived from the mitigation plans, we question how the decision maker can properly weigh the impacts to the fishery and aquatic resources. We believe the project should only go forward if it can be clearly demonstrated that fishery resources will not be negatively impacted. In order to make this assessment there needs to be a detailed description of the sediment reduction and mitigation plans. (S4711)

Response: The final EIS Chapter 2 and the biological assessment for bull trout (Appendix B) detail the project mitigations for Alternative V that we believe directly address aquatic issues. These mitigations benefit all species in Rock Creek, not just bull trout.

The Agencies have revised Alternative V to resolve the shortcomings you identify from the supplemental EIS, and to conform to manual direction, the National Forest Management Act, and the Forest Plan. The primary modification is a refined sediment mitigation requirement. We have estimated the actual tonnage of sediment resulting from construction and operation of the mining facilities. However, sediment mitigation sites were not included as they have not been identified. Because only limited validation monitoring for the sediment effects model that produced this impact assessment has been performed, we inflated the modeled effects by a factor of six to represent a conservative estimate of effects. The cumulative annual (inflated) tons of sediment resulting from the proposed action were then specified as a mandatory mitigation requirement in Rock Creek only, to be performed prior to or concurrent with reconstruction of roads, utilities and exploratory adit development. The mitigation (sediment reductions) would further reduce estimated impacts since it was not a factor in the WATSED calculations. Since the assessment model also predicted sediment loads would fall below existing conditions near the end of the project due to revegetation of road corridors and hard surfacing of roads, we are confident that the full protection and mitigation requirement will result in a long-term recovery of stream sediment conditions in Rock Creek. By also minimizing the disturbance levels in the riparian zone, we also predict a long-term improvement in overall habitat quality as the stream and riparian area recover from historic landuse practices. Foreseeable activities are disclosed in the Reasonably Foreseeable Activities section in Chapter 2.

The 300-foot wide “buffer” between the mill site and the forks of Rock Creek should be sufficient to minimize or avoid effects on bull trout and their habitat. The research that culminated in the Inland Native Fish Strategy (INFS) riparian “buffer” standards suggests sediment would not migrate offsite at the mining project sites, particularly since a containment system is included in the mill site plans. The construction and reconstruction of road and utilities would have far less effect than you conclude - most of the affected corridor is flat, well away from Rock Creek, and has not surface stream flow. We have also minimized this risk of effects by consolidating all utilities in the same corridor as the main access road wherever possible.

The applicant will construct containment dikes around the mill site, tailings facility and other permanent facilities. All ditches built to intercept stormwater will be built to handle a 100-year weather event. The applicant also must submit a stormwater control plan as a condition of operating permits. Any precipitation falling on the mill site will be routed through the water treatment facilities before being discharged to the Clark Fork. These measures will minimize the effects on Rock Creek hydrology.

We have minimized the risk of accidents and spills by requiring the following precautions: (1) burial of all pipelines (except at stream crossings), (2) use of dikes between the stream and the pipelines, (3) construction of emergency spill ponds near stream crossings to contain pipeline ruptures, (4) installation of pipeline monitoring equipment that detects leaks, (5) a requirement for a dewatered viscous tailings deposit with no standing water, (6) busing of employees within the drainage, (7) transport of concentrate (refined ore from the milling process) via a pipeline rather than a vehicle, (8) widening of roads, (9) speed restrictions, and (10) other associated measures.

However, there remains a remote possibility of accidents or catastrophic events that exceeds the risk associated with the No Action alternative. However, that the No Action alternative also would have a minor risk of accidents and spills, because the watershed would still be used by the public, and because a railroad (with unknown chemicals aboard) does pass through the watershed on a frequent basis. As Chapter 4 Hydrology indicates, there are minor unmeasurable water quality effects that are not expected to significantly affect beneficial uses.

4. The impacts on fish in Rock Creek, especially bull trout, could be significant and that this is a critical fishery. Degradation of this fishery at any level would be in conflict with bull trout recovery efforts in our district. The fish populations in Rock Creek and Bull River are distinct. Efforts at sediment reduction in the Bull River watershed may very well benefit the bull trout in Bull River, but we do not believe that this would benefit the Rock Creek bull trout population and would therefore not be an adequate mitigation. Impacts to bull trout in Rock Creek must be mitigated fully in Rock Creek. (S2794)

The finding that the proposed project would unlikely jeopardize the resident component of the bull trout population appears to be based on very limited information, and does not take into consideration seasonal use, movement patterns and the variation of stream flow (both seasonally and annually). Based on the information that is currently available, it appears that the proposed project threatens the viability of the Rock Creek stock of bull trout. The proposal for undertaking off site mitigation in the Bull River drainage is unacceptable because such mitigation would provide no protection to the Rock Creek stock of bull trout, which should be considered unique unless some new data prove otherwise. (S5789)

I do not think providing mitigation measures in another stream will effectively do [anything] to enhance native populations in Rock Creek. (S6721)

The Rock Creek population should not be sacrificed or significantly impacted in the hope of mitigating the loss of habitat or populations solely in the Bull River. Habitats in both tributaries need to be maintained or improved to protect the resident and migratory components of their respective bull trout populations. Negative impacts to bull trout habitat and populations in Rock Creek from mine development and operation will significantly reduce the potential benefits to bull trout productivity and viability from restoring connectivity of lower Clark Fork River/Lake Pend Oreille bull trout populations. (S4711)

Fragmentation and habitat disruption of the lower Clark Fork/Pend Oreille bull trout metapopulation have already been extreme. Regional persistence of viable populations of bull trout depends on the maintenance of multiple local populations (Rieman and McIntyre 1993:15). The risk of local population extinction of Rock Creek watershed would be rated as extreme based on stochastic modeling by Rieman and McIntyre, 1993. The proposed Asarco project and other concurrent activities may jeopardize the continued existence of adfluvial bull trout in Rock Creek by increasing sediment loads during mine construction or in the event of a severe mine related accident. (Asarco SDEIS, 1998, Vol.2, App B p.16). (S3469)

Page 2-78, 2-188 - sediment reduction plan concern: What is planned? Reducing sediment loads in Bull River does not reduce impacts to Rock Ck. and is not an acceptable mitigation for impacts to Rock Ck. (S5093)

In addition to the misleading statements regarding impacts to native fish in the West Fork, the SDEIS also downplays the impacts that mine discharges will have on bull and westslope cutthroat trout in the mainstem of Rock Creek. For instance page S-14 suggests that impacts to aquatic invertebrates and sensitive fish (bull and westslope cutthroat trout) caused by project-related increases in nutrient and sediment loads will only occur under Alternatives II and III. Also, pages S-16 and 4-74 state "sediment abatement efforts on 114 acres of Rock Creek and/or the Bull River watersheds in Alternative V would offset expected short-term sediment effects." These statements are inaccurate, and are contradicted by others in the SDEIS that admit impacts will occur.

Page S-19 says "all action alternatives would impact resident populations of bull trout and westslope cutthroat trout in Rock Creek." Page S-19 states that "under alternative III through V, the identification and reduction of existing sediment sources in Rock Creek and the Bull River drainage by ASARCO prior to mine construction would help offset short-term increases in sediment due to facility construction." "Helping offset" and "offsetting" mean two completely different things, and the EIS discussion must be consistent. (S6318)

The BA fails to demonstrate that the proposed mitigation for sediment will offset the impacts of inevitable increases on Rock Creek bull trout. The SDEIS does not describe specifically what is entailed, or exactly where or when this sediment mitigation will take place. Furthermore, reducing sediment delivery from existing sources in the Bull River will not compensate for the impacts on bull trout in Rock Creek. (S805)(S6806)(S1687)(S1851)

pg. 2-71 para. 4, The 114 acres of mitigation to be done as a result of BMP's being less effective than planned need to be specifically identified. At a minimum the work would have to be done in the Rock Creek watershed.(S614)

Page 4-74 (Sediment): While we recognize that much effort has been put into mitigation of sediment impacts to Rock Creek, and we applaud this effort, we remain concerned that impacts from sediment to Rock Creek under Alternative V would still be potentially significant. Additional information should be provided describing the additional sediment abatement on 114 acres of Rock Creek and/or Bull River watersheds. We recommend that mitigation for Rock Creek impacts be carried out in the Rock Creek watershed. Are there additional opportunities to reduce or further compensate for sediment impacts to eliminate potential significant adverse effects to bull trout in Rock Creek (potentially to be listed as T&E species)? (S146)

Page 4-74, paragraph 1 - [We] believe that making the proposed mitigation for sediment impacts more flexible would have benefits for Rock Creek. Requiring 114 acres of mitigation, much of it likely in the Bull River drainage may not be as effective as site specific sediment reduction projects in the Rock Creek drainage. (S5)

We disagree that mitigation should occur in the Bull River drainage for impacts in Rock Creek. This has been proposed for sediment (Vol. 2 Appendix B Bull Trout Section page 17) and possibly other impacts. The DEIS suggests mitigating some of the impacts to Rock Creek in the Bull River to meet the goal of an enhanced bull trout population in Cabinet Gorge Reservoir. Page 4-74 states This program should reduce the existing sediment sources in the drainage and reduce the impacts of new sediment sources on Cabinet Gorge bull trout. However, an enhanced stock in Bull River is unlikely to provide individuals on a time scale that would affect the persistence of an impacted Rock Creek stock. Recent genetic research in the Flathead showed distinct stocks of bull trout - suggesting that local extinction of stocks will likely be long-term extinction (U.S. Fish and Wildlife Service memo dated 28 April 1997). Preliminary genetic work in the Lower Clark Fork-Lake Pend Oreille drainage had a similar finding (Spruell and Allendorf, University of Montana, January 1998). WCT have also been shown to form distinct stocks, suggesting little interchange of individuals (Chris Hunter, MFWP personal communication, citing work by Robb Leary, University of Montana). These findings are important because they suggest that many stocks can rely little, if any, on others to maintain adequate numbers of individuals and avoid extirpation. Therefore, because bull trout and WCT form distinct stocks by being largely, or completely, reproductively isolated, maintenance and enhancement of these species, and their habitat, in Rock Creek is critical to meeting our management goals.

We also disagree that short-term impacts would be avoided under the current mitigation plan. Specifically, we disagree with the statement that the sediment abatement effort on 114 acres of Rock Creek and/or Bull River watersheds under alternative V would offset expected short-term sediment inputs (page 4-74, last sentence of top paragraph. Note to the editors: mitigation acreage is stated to be 74 acres on Bull Trout Section - 8. Is it 114 or 74 acres and why are they different? We use 114 acres). As stated on page 4-74, since very little spawning habitat is available, and available gravel in mainstem Rock Creek already contains a high level of fine sediment, any short-term increase in the percentage of deposited fine sediment in these spawning substrates would further reduce survival to emergence and potentially contribute to the elimination of resident fish populations. High levels of sediment input during the initial phases of the mine, as much as a 30-65% increase (page 4-74, second paragraph), may be unacceptable, and result in permanent loss of the Rock Creek bull trout stock, making it irrelevant to bull trout that sediment loading will be reduced at the end of the 30-year project. High sediment loads also may impact drainages for decades after occurring.

In light of the precarious nature of the bull trout in this system, existing sediment inputs into Rock Creek should be significantly reduced before additional impacts occur. It can be implied from this document that habitat conditions are already on the edge. Additional impacts could result in irreversible consequences. Therefore, sediment reduction activities should occur immediately in order to reduce sediments now, before any additional inputs occur.

The sediment reduction mitigation assumes a 1:1 mitigation for sediment (e.g., increased sedimentation on 114 acres, so mitigation on 114 acres). However, the total sediment load increase on the 114 to-be-disturbed acres may be significantly greater (orders of magnitude) than that fixed on the mitigation acres. As stated on page 4-68 (last paragraph), the impacts of deposited sediment is also difficult to quantify because it is not possible to predict accurately the amount of sediment that would be deposited on the stream bottom. A proactive, conservative approach would be to base mitigation on a factor of 2-3 times the amount disturbed, such as 228-342 acres. Mitigation should occur in the Rock Creek drainage to offset impacts in this drainage. Mitigation that maintains the status quo (i.e., 1:1 strategy) is not consistent with possible restoration plans in Rock Creek or the Lower Clark Fork basin. Degradation or maintenance of habitats in Rock Creek would inhibit our ability to restore bull trout as well as limit our potential. (S1816)

Response: Alternative V has been revised slightly in response to these comments. Reaction to the supplemental EIS proposal to mitigate impacts to Rock Creek bull trout by splitting mitigation efforts between Rock Creek and Bull River were consistently negative. Further, the applicant commissioned a field study in Rock Creek in 1997 to locate sediment mitigation opportunities. With this refined

information, we re-evaluated sediment effects to formulate a mitigation plan focused entirely on Rock Creek, and a plan that would result in a short- and long-term reduction in sediment loading.

Alternative V was revised on the basis of an in-depth examination of an effects model prediction. Rather than use the R1-WATSED effects model simply to compare alternatives (which is its intended use), we used the model to estimate the magnitude of the sediment impacts at various points in Rock Creek. Because the model has not been enhanced to reflect real-world conditions in Rock Creek, we used model validation monitoring from an equivalent watershed to adjust the model output. The model's prediction for tons of sediment was inflated by 300% to bring it in line with the actual amount of sediment that monitoring suggests will result from the proposed soil disturbance levels. Because of the risk involved in this analysis (i.e. beneficial uses at high risk of irretrievable loss, unforeseeable differences between watersheds, marginal amounts of monitoring data and no replication of the validation effort), we elected to then inflate the real-world estimate by another 200% to define a sediment mitigation requirement that would conclusively produce an improvement in Rock Creek over the long term.

Thus, Alternative V now requires sediment mitigation beginning with project start-up. A natural sediment source near the mouth of Engle Creek that is responsible for the very high streambed fine sediment levels in potential bull trout spawning habitat would be armored and revegetated. This site-specific mitigation would achieve one-half of the sediment mitigation requirement of a 400-ton annual reduction. Sterling must also survey the West Fork of Rock Creek, and the mainstem Rock Creek near Orr Creek area, to quantify the amount of sediment reduction that would be achieved at these two source areas. The remaining 200 ton sediment reduction requirement would be accomplished by Sterling through mitigation of sediment sources in the west fork and the upper mainstem around Orr Creek, thus benefitting non-migratory and migratory bull trout. This 400-ton sediment mitigation would have to be completed before the mine goes into production (thus it would be concurrent with road reconstruction and exploratory adit development) so that there would be no net increase in sediment loads in any year. Sterling would then monitor and maintain the mitigation sites to ensure annual attainment of the 400-ton reduction requirement.

With this revision to Alternative V, the proposed action is not likely to adversely affect the Rock Creek subpopulation of bull trout, however, bull trout individuals may be adversely affected. To reinforce this finding, and to respond to these and other comments on the supplemental EIS, we explicitly identify all the protection measures required in Alternative V that led us to this "not likely to adversely affect" finding (see the bull trout biological assessment). However, as the final EIS notes, the risk of adverse effects to bull trout and the environment from the proposed action is marginally greater over the long term than No Action. The potential sources of unforeseeable adverse effects are accidental spills (pipeline ruptures, chemical spills along roads, etc.), extreme weather events that breach containment systems, geologic events that destabilize the tailings deposit, and human error in constructing and operating the proposed mine. Alternative V includes those measures we consider likely to reduce these unforeseeable risks to a manageable level, but we could not identify a suite of avoidance measures that would reduce these accidental risks to a discountable level.

5. The fact is, there is very little spawning habitat available in Rock Creek, and the spawning gravels that are there already have a high level of fine sediment, close to critical levels. Any project-related increases in sediment will only make this bad situation worse. The SDEIS admits this on p. S-19, p. 2-122, and p. 4-74, stating that "increased

sedimentation would significantly reduce fry emergence and potentially would lead to elimination of these fish populations due to spawning failure." Additionally, p. 4-68 points out that "increased levels of deposited sediment could reduce the quantity of macroinvertebrates (the food supply for fish) in Rock Creek."

In response to these threats, the agencies depend on sediment abatement projects to mitigate the adverse impacts. Pages S-19, 2-73, 2-122, and 4-73 all suggest that ASARCO's 114 acres of sediment reduction projects will offset sediment impacts. In fact, p. 4-73 goes as far to say that "alternative V should result in a reduction of sediment reaching Rock Creek."

*The regulatory agencies cannot assume that sediment reduction projects at undetermined times and locations, will mitigate project-related impacts to bull and westslope cutthroat trout in Rock Creek. Several statements from the SDEIS demonstrate that the Agencies do not know where, and when these abatement projects will occur. As noted elsewhere in these comments, reliance on such vague, untested, and unproven "mitigations" violates NEPA/MEPA. *Neighbors of Cuddy Mountain v. U.S. Forest Service*, (No. 97-35654, 9th Cir., March 4, 1998, 1998 WL 89069, *7-8).*

The NEPA document must include more detailed information on the location, timing, and expected effectiveness of these sediment reduction projects.

p. 2-122 of the SDEIS states "under alternatives III through V, the identification and reduction of existing sediment sources in the Rock Creek and Bull River drainages by ASARCO prior to mine construction would help offset short-term increases in sediment due to facility construction."

page 2-78 describes the Aquatics and Fisheries Monitoring and Mitigation Plan that these abatement projects would be developed under. This discussion notes that "ASARCO would be encouraged to negotiate to the extent possible with private landowners on Engle Creek to repair several sediment sources such as the eroding bank on Engle Creek, and need to do instream improvements to help sediment transport."

These statements demonstrate that ASARCO has not identified the locations for the abatement projects, and that one of the most important ones depends on negotiations whose outcomes cannot be reliably predicted. Additionally, it is difficult to determine how abatement projects in the Bull River drainage will help reduce existing sediment loads in Rock Creek.

The SDEIS discussion is also unclear on when the sediment abatement projects in the Rock Creek drainage will be completed. Pages S-19 and 2-122 say they will be completed before construction, yet page 8 of the Biological Assessment presented in Appendix B says they will be completed during construction. This issue must be resolved.

For the record, we believe that doing the sediment abatement projects during the mine construction period is a mistake. These projects can actually cause short-term increase in sediment loads before vegetation is established on the disturbed land. The projects should be completed before any mine-related construction activities, preferably two to three years in advance so their effectiveness can be evaluated and applied in the MEPA process. (S6318)

That said, we want to be absolutely clear that we appreciate ASARCO's commitment to implement these sediment abatement projects, and that we support the proposal to include them as a mitigation for mine-related sediment increases. However, the time, location, and effectiveness of the abatement projects must be presented during the NEPA process, not after a permit decision has been made. Additionally, we believe the abatement projects must be done well in advance of any mine construction activity so their effectiveness can be evaluated during the NEPA process before allowing mine-related increases in sediment loads to Rock Creek. (S6318)

Response: Sediment abatement and mitigation would occur concurrent with project construction although Sterling could begin sediment abatement projects before mining commences, and

monitoring would be required. Identification of sites and development of sediment mitigation plans and schedules would be completed prior to project construction.

Sediment mitigation measures would occur in the Rock Creek drainage on public lands, as well as private lands, would be implemented at known sediment source locations at levels in excess of probable impacts, would rely upon proven techniques of stabilization and revegetation, and would be monitored and maintained to ensure effectiveness over the life of the project. Sediment mitigation would involve measures such as stabilization and revegetation of large eroding streambanks and would not require excavation of soils that would result in additional fugitive sediment, therefore it would offset project effects concurrent with construction of facilities since there would be no net short-term increase.

With the exception of wetland impacts, effects on riparian areas are limited and cannot be mitigated (e.g. cannot create new riparian areas), so Alternative V includes extensive measures to minimize effects to the point that normal riparian recovery processes will equal the extent of project effects. There are substantial differences between Alternatives II and V (i.e. activity levels, locations of activities, mitigation requirements) that clearly indicate significantly different effects.

6. Habitat Components: Apparently sediment samples have been collected by the McNeil core sampler on only one reach of the mainstem of Rock Creek and on two reaches of the West Fork. Thus survival-to-emergence estimates based on current conditions are available for only RC-2, WRC-reach 1 and WRC-reach 2. (BA at 4, 5, 6) This information needs to be collected for all reaches of Rock Creek and its tributaries in order to adequately assess the current habitat condition, how it is currently affecting the bull trout spawning success rate in Rock Creek, and what the affects of adding additional sediment may have on bull trout spawning and rearing. (S805)(S6806)(S1687)(S1851)

Response: The sites that have been sampled for instream bed sediments are the two apparent essential habitats for bull trout based on distribution and abundance data. These two sites are also the probable location for most, if not all, bull trout spawning. The other reaches that have only been sampled for surficial sediments are either intermittent and occupied only seasonally (thus only used for rearing), or they are outside the zone of project activities and will not be physically affected. Interagency guidelines for the analysis of effects on bull trout demand two disclosures for fine sediment - bed sediments for spawning areas, and surficial sediments for rearing areas.

7. Page 4-76, last paragraph The statement that activities could jeopardize appears to be taken from the draft Biological Assessment (p 16), but does not indicate that the analysis refers to the project prior to application of mitigation; please clarify. (S5)

Response: The last paragraph on page 4-76 of the supplemental EIS did take all mitigation into account (the WATSED model did not), including the "additional" requirements appearing near the end of the bull trout biological assessment. Some inconsistencies in the supplemental EIS were corrected in the final EIS. The reason for the finding that Alternative V may adversely affect bull trout in the mainstem Rock Creek in the supplemental EIS was the projected increase in streambed sediments in lower Rock Creek. In the absence of better information, we assumed that a fraction of the mitigation would take place in Rock Creek (the balance to be in Bull River). This would not be sufficient to avoid short-term adverse sediment increases in lower Rock Creek during and immediately after project construction. In the final EIS and Biological Assessment, the recommendation is that all sediment reduction mitigation occur within the Rock Creek drainage under Alternative V. Thus, it is likely that there would be a reduction of sediment in Rock Creek in the long term although perhaps not during mine construction activities.

8. *We are also concerned with fish passage and connectivity. The SDEIS fails to address where populations are located, how those populations are connected, and what are the barriers to movement. (S22)*

Response: A revised Alternative V will result in a long-term benefit to bull trout and other species native to Rock Creek, and it will aid the recovery effort. Currently, stocks in Lake Pend Oreille and Cabinet Gorge Reservoir are not connected because of the impassable Cabinet Gorge Dam. In the event that connectivity is reestablished by addition of a fish passage facility, mitigation proposed for Rock Creek should benefit all downstream stocks as well. The USFWS Biological Opinion requested that the agencies investigate options for the discharge diffuser. It has been determined that the discharge could initially be released from the southern most ports, gradually adding ports to the north in order to leave a discharge free zone on the north shore of the Clark Fork River to allow bull trout to travel beyond the mouth of Rock Creek to Noxon Dam where the Fish, Wildlife, and Parks have installed or will install fish traps to move bull trout around the dam. At future 5-year reviews of the MPDES permit, the Agencies will investigate potential modification of the mixing zone to allow the discharge to remain to one side of the river. This could result in a slightly longer and narrower zone than is in the proposed MPDES permit (Appendix D).

9. *Alternative V as described in the SDEIS proposes the outfall location for treated mine waste water to be located a short distance upstream of the mouth of Rock Creek. This aspect of the outfall location does not appear to be addressed in the SDEIS and should be taken into account given the importance to maintaining and the potential to enhance native adfluvial salmonid runs into Rock Creek. (S5830)*

Response: The treated waste water outfall would issue from a diffuser that spans the river/reservoir approximately 800 to 1000 feet upriver from Rock Creek. This diffuse discharge, together with a large mixing zone and considerable dilution capacity of the river, would mean water passing the mouth of Rock Creek would be indistinguishable from water upstream of the outfall. To mitigate for potential impacts to migratory fish, the diffuser would discharge water initially on the south side of the river so that a corridor of "clean" Clark Fork flow will be available for migrating fish. Even if migrating fish did swim over the diffuser, the time of exposure to the dilute waste water would be exceptionally short. We expect no significant impact to the Clark Fork biota except in the immediate vicinity of the diffuser where invertebrate and plant species composition and productivity would shift somewhat in response to nutrient loading.

10. *The hypothesis that bull trout enter Rock Creek from the reservoir to avoid thermal stress from high summer water temperatures should be addressed. (S5)*

Response: We have also heard the accounts of reservoir bull trout seeking refuge in Rock Creek, and have added this to the final EIS.

11. *In the strict sense, our unit of management for bull trout is stocks, not populations. We recognize a bull trout population as being a group of bull trout that occupy a habitat at the same time (e.g., Cabinet Gorge Reservoir). But, in addition, realize that this population is made up of several stocks (such as the Rock Creek stock); or, groups of fish that are genetically self-sustaining and isolated geographically or temporally during reproduction. The terms stock and population are commonly interchanged by us and others. This clarification should alleviate confusion in our comments that follow.*

Interpretation of population estimates for bull trout referred to in the Bull Trout Section on page 14 are incorrect. The statement that 1986 (Barnard and Vashro 1986) and 1987 (Hightower and Vashro 1987) estimates were for all sizes of fish and do not convey the number of fish 1 year or older is incorrect. These estimates, as reported, did not include fish 75 mm or less because of the inefficiency of electrofishing to capture small fish; therefore, they probably are indicative of the number of fish 1 year or older. WWP (1996) reported age 1+ fish averaged 66 mm in

Rock Creek. The WWP data is likely to very closely reflect the number of age 1+ fish as well, although not specifically reported. WWP used night snorkeling and electrofishing to estimate number of fish. Griffith (1981) noted the difficulty in accurately counting salmonid fry less than 60 mm. Saffel and Scarnecchia (1995) reported that, in Lake Pend Oreille tributaries, 88% of the age 0 bull trout were found in the channel margins where an underwater snorkeler could not observe them (length of fry were typically 40 to 60 mm, with the largest being 75 mm).

Washington Water Power (WWP) data was also referred to, but is questionable in some regards. Both the total estimate of 2,643 bull trout (combined) and 272 in the mainstem (reach 2) numbers in the DEIS are consistent with the report. However, the WWP report is confusing. Examination of data in the WWP (1996) report shows that the sum of the reaches do not equal the combined estimate - inconsistent with the Hankin and Reeves methodology (Hankin and Reeves 1988) they reported to have used. Summing the reaches for the Rock Creek drainage gives a total of 1,966 bull trout and 272 in the mainstem. We believe it is incorrect to use the combined estimate and reach estimate in determining the relative number of fish in a section of the drainage. Instead, the sum of the reaches (1,966) versus reach 2 (272) should be used. It is possible that WWP used the Hankin and Reeves methodology for sampling but not for calculating population estimates. WWP (1996) did use a more sound sampling strategy and methods versus electrofishing representative sites or limited random sites that may not reflect available habitat, however. Considering habitat characteristics in the Rock Creek drainage and sampling methods and strategies, we consider the WWP population estimate of about 1,900 bull trout the most accurate (see Griffith 1981; Goetz 1994; Bonneau et al. 1995; Thurow and Schill 1996; and Baxter and McPhail 1997 for discussion on sampling biases and efficiencies).

We offer a different perspective on the number and distribution of fish, particularly bull trout. Page Bull Trout Section - 14, last paragraph addresses the number of fish in the drainage. Our opinion is that there are between 1,200 and 2,600 (estimates from DEIS; numbers rounded to the nearest 100) bull trout 1-year or older in the Rock Creek drainage, centering on about 1,900, as stated earlier. WCT of all ages (but probably a bias that excludes most age 0 fish) number about 4,700 in the drainage (WWP 1996). The following table describes our understanding of the distribution of bull trout and WCT during summer:

	Percent Bull Trout			Percent Westslope Cutthroat		
	<u>Mainstem</u>	<u>West Fork</u>	<u>East Fork</u>	<u>Mainstem</u>	<u>West Fork</u>	<u>East Fork</u>
MFWP* 1987	6%	15%	79%	21%	3%	76%
WWP 1996	14	39	47	25	12	63
Watershed	18	3	79	25	16	59
Consulting 1997						
AVERAGE	13	19	68	24	10	66

**MFWP percentages are rough estimate; the 6% of all bull trout being in the mainstem agrees with values in the DEIS/SDEIS though both the averages of 13% for bull trout and 24% for WCT in the mainstem appear to be substantiated by the data (i.e., little or moderate variation between years and close to the WWP estimate). These proportions can be considered the minimum portion of the stocks that will be affected in the mainstem. Our estimates disagree with the DEIS which implies that 6 to 10% of the bull trout population is in the mainstem during summer (calculated from values in the last paragraph on page Bull Trout Section - 14 last paragraph).*

The status of Rock Creek versus other streams (e.g., Bull River drainage) needs to be qualified. Redd counts are not reliable in either drainage. In the Bull River, redd counts are questionable because of the confusion with brown trout redds. In Rock Creek, spawning habitat is not conducive to redd counts (i.e., small pockets of suitable gravels). Based on redd counts, the Bull River drainage has more bull trout. However, WWP (1996) provided a comparison of bull trout numbers based on stream estimates. Rock Creek, in this case, has a much larger

population of fish (1,900) than all Bull River tributaries and mainstem combined (809). Because of the poor confidence in redd counts and high disparity in stream estimates, Rock Creek is considered to be the stronger of the two core areas. (S1816)

Response: Thank you for reinterpreting the data. This has been taken into consideration in the final EIS. As the Biological Assessment for bull trout implies, on the basis of fish numbers alone the viability of the species in Rock Creek is probably marginal in the long-term but apparently better than other stocks nearby. However, based on the historical record, Bull River should be the dominant stock in the area if the migratory corridor were open and the prime adult habitats (river and lake) were in optimum condition.

12. The Statement of Finding relies on sampling data that describes the distribution of bull trout during summer; thus assuming that little or no movement occurs between stream reaches and that all critical habitats are present where the fish were sampled. Specifically, the sentence on page Bull Trout Section - 17 which states The proposed project and other concurrent activities are not likely to jeopardize the continued existence of the resident component of the metapopulation, however, because only minor impacts, if any, are expected to occur upstream of the proposed mill site, where most of the resident bull trout are found. This suggests that fish remain above the mill site year-round and from year-to-year. There is emerging evidence to the contrary. Gowan (1995) found that brook trout moved in response to decreasing habitat suitability that occurred with decreasing flows from spring to summer. Gowan and Fausch (1996) found that brook trout movement was greater in two Colorado streams during a dry year than a wet one. It was suggested that these movements may be in response to habitat becoming unsuitable or dry. The authors also provide evidence that movement by salmonids is likely more common and extensive than previously thought.

Upstream movement in the Rock Creek drainage was associated with the drying of mainstem Rock Creek (Hightower and Vashro 1987). Therefore, habitats in the mainstem may provide critical habitats during seasons other than summer, necessary for the current population to be maintained. During winter, stream salmonids use spaces between cobbles to hide from predators, conserve energy, prevent physical harm, and avoid downstream displacement during freshets (Chapman and Bjornn 1969; Bustard and Narver 1975). Hillman et al. (1987) found that fine sediments filled spaces between cobbles, reducing the number of chinook salmon in an Idaho stream. Year-to-year distribution in Rock Creek appears to be variable as well (e.g., in the West Fork, see table above), and needs to be more thoroughly investigated. During 1997, the mainstem of Rock Creek was perennial (Igor Suchomel, Watershed Consulting, personal communication). Were there more bull trout and WCT found in the mainstem last year? Most likely, yes.

Evidence suggests that fish in Rock Creek and elsewhere move regularly. Movement by fishes in Rock Creek may expose them to degraded habitat during one or more seasons (especially during winter and high flows), or between years of high and low flows, and result in lower numbers of individuals in unimpacted habitats. (S1816)

Response: The supplemental EIS did indeed rely upon summer fish distribution and abundance data, as well as other measures of stock health and project impacts, to arrive at a conclusory finding. Winter refuge and fish behavior do not logically demand a different conclusion. Apparently, in almost all years, the only habitats available in winter will be the same habitats occupied in the summer because the same reaches dewater in both seasons. It is highly unlikely that the mainstem of Rock Creek has sufficient shallow subsurface flow in dewatered reaches to sustain over-wintering fish in the streambed. The important issues unique to winter in Rock Creek are the fishes relatively more vulnerable physical condition and the possibility of heavy ice formation (and further loss of habitat). Adverse effects from the proposed project are likely to accrue instream at any season, but summer distribution and abundance of fishes is a good relative indicator of important habitats, fish behavior and likely impacts. Regardless of this debate over what season is most limiting or the source of potential mortality, our findings for resident bull trout were in error in the Biological

Assessment in the supplemental EIS. The West Fork of Rock Creek would be affected by exploratory mining activities early in the project timeline, and resident bull trout are likely to be found in the mainstem to some degree. Thus, the final EIS and Biological Assessment for bull trout rely upon different assumptions, includes revised protection and mitigation measures, but concludes with a similar finding of not likely to adversely affect the bull trout subpopulation. However, the Biological Assessment does conclude the individual bull trout are likely to be adversely affected due to short-term increases in sediment loading the project construction.

13. The Rock Creek watershed's Beneficial Uses include fishable waters and supports bull trout. According to the Clean Water Act Section 304 (a)(1) the States shall develop and publish criteria for water quality accurately reflecting the latest scientific knowledge... on the effects of pollutants on biological community diversity, productivity, and stability, including information on the factors affecting rates of eutrophication and rates of organic and inorganic sedimentation for varying types of receiving waters. There are clearly no data which pertain to the effects of pollutants on bull trout in the Asarco project SDEIS, 1998. Bull trout is a persistent species in the Rock Creek watershed and contributes to the biological integrity and is a species used as an indicator species for measuring ecological conditions. (Reiman and McIntyre, 1993). Bioassay monitoring for all species of fish would be confined to only heavy metals testing of copper, zinc, and mercury (Asarco SDEIS, 1998; Vol.2 App H, p 10). There are no data available to support at what concentrations these metals found in bull trout tissue may affect or inhibit behavior, survival and growth of bull trout embryos, Y.O., Y, or juveniles. (S3469)

Response: To our knowledge it is true that bull trout have not been subjected to controlled laboratory studies on effects of various pollutants on growth, behavior and survival. However, other trout, insects and amphibians that occupy Rock Creek have been studied, and several species are very sensitive to some pollutants. We used information about other species to estimate whether bull trout and the aquatic community in general would be affected. They will be, with minor changes in composition and productivity for aquatic plants and insects. These changes will not be great enough, or widespread enough, to adversely affect fish or other species.

If you examine the Surface Water Quality section of Chapter 4, Hydrology of the final EIS you will find Montana water quality criteria and trigger values ("pollution limits") have been specified for this project. Also see the MPDES permit in Appendix D.

Unacceptable metals loading in Rock Creek is highly unlikely because waste water would be treated before being released in the Clark Fork River. Also, the tailings would be disposed as a semi-solid paste under Alternative V that would set up somewhat like concrete, and very little metals would leach out of the tailings because very little water would pass through the paste tailings deposit. In short, pollutants and metals are unlikely to measurably affect survival and growth of bull trout, other trout, and amphibians, but small changes in the aquatic plant and insect community in localized areas could change fish and amphibian behavior for a few years.

14. Justify the risk of loss of genetically pure strains of bull trout and westslope cutthroat trout in Rock Creek from storm water discharges, increased sedimentation, potential reduced flows, and potential spills and accidents. (F1) (S177)(S681) (S4364)(S4891)(S4912)(S5051) (S5088)(S5091)(S5555)(S5763)

Rock Creek is critical habitat for bull trout. We are concerned that you have not considered the recent investigations that indicate that the genetic material of the Rock Creek Char is unique. Loss of this material could have a devastating effect on the ability of the species to recover from the brink of extinction. It seems that you have not indicated and assessed the value of the resident bull trout in Rock Creek. Why? That population is different from other drainage populations below the dams. Adverse impacts to water quality and habitat from this mine

operation will have a negative effect unless additional guarantees are provided to preserve the environment. (S3468)(S3536)

Results of dam relicensing fish genetics research indicate that the East Fork Bull River bull trout population is genetically distinct from bull trout populations in the Pend Oreille system, which in turn are genetically different from each other. Thus far sub-populations that have been tested are showing to be genetically unique. In all likelihood the Rock Creek resident bull trout population is also genetically distinct. The implications of this are important. Avoiding impacts to the Rock Creek resident bull trout population and restoring its viability is crucial from the standpoint of preserving its unique genetics. The fact that Rock Creek has resident as well as migratory bull trout is an unusual circumstance in the lower Clark Fork - Pend Oreille system. These populations must be protected and restored. (S805)(S6806)(S1687)(S1851)

Response: We have revised Alternative V to minimize or avoid impacts to bull trout. We are well aware of the genetic investigations of bull trout and westslope cutthroat in the lower Clark Fork, Flathead and other Columbia River watersheds as well as ongoing recovery planning. In fact, the bull trout in Rock Creek have not been genetically tested though we do assume they are distinct from most other stocks. The resident bull trout may or may not be distinct from the larger migratory bull trout - there is circumstantial evidence to suggest they are not. It appears that both fish species include relatively distinct stocks from watershed to watershed, with the native westslope cutthroat being isolated even more than the bull trout. Conversely, other studies in those few places where the bull trout population is strong suggest that sub-adult fish wander into adjacent watersheds and thus could be actively linking populations together. Taken as a whole, these study results suggest the fate of the bull trout may be vested mainly in the strength of the most productive stock(s), while the ability of the species to adapt to change is dependent mainly on many smaller stocks. Westslope cutthroat long-term conservation will be somewhat different in that many strong stocks will be needed since there appears to be very little chance of naturally refounding a stock once it is lost.

15. The SDEIS seems to imply that the upstream subpopulations of the Lower Clark Fork bull trout metapopulation are already genetically isolated. No data support this assumption; in fact, it seems likely that some gene flow occurs between adfluvials and the so-called resident ("nonmigratory") subpopulations. Such gene flow, however infrequent, may well be vital to the long-term health of the "resident" subpopulations. If mining activities further isolate the upstream fish, the gene flow dynamics are likely to change to the detriment of the upstream subpopulations. Totally isolated portions of metapopulations are typically more susceptible to extinction than those experiencing some gene flow. What about the so-called resident bull trout below the mill site in Rock Creek? (S3462)

If adfluvial bull trout were not able to successfully spawn in Rock Creek, the adfluvial population would die out if they were not replenished by spawning resident fish in the east and west forks of Rock Creek. Given the inability to document bull trout spawning in the main stem of Rock Creek, due to low water, no water, or stream blockages, it seems that an adfluvial population of bull trout, genetically different from the resident fish would have become extinct by the present time if young bull trout were not being supplied to the reservoir as a result of spawning in the east and west forks of Rock Creek. In summary, there is no data to suggest that there are genetically or behaviorally different strains of bull trout utilizing Rock Creek. (S5)

Response: At no point in the draft or supplementary EISs do we assert that resident and migratory bull trout are genetically distinct. Although preliminary genetic data from the area (but not Rock Creek) may support the possibility of genetic isolation between adjacent watersheds. We assume that these two behaviors by bull trout are some of the species' strategy for avoiding extinction, and the primary difference between them is size and behavior. It does appear that resident and migratory forms of bull trout are spatially segregated during spawning, so there is some potential for differences in effects. The only genetic investigations that we are aware of for this issue were

conducted on Dolly Varden above and below a migratory barrier. These tests found no measurable difference between the two life forms, but, because the tests involved protein rather than DNA sampling it is not considered a definitive answer. Because the migratory form of bull trout represents the majority of the reproductive potential in a recovery program, and because the Rock Creek bull trout stock benefits from having a fraction of its number living elsewhere and largely immune to weather-driven disasters in their home stream, we consider conservation and recovery of the migratory form to be essential for long-term viability and recovery.

16. We are concerned for the intrusion and degradation of environment utilized by bull trout. This is one of the last intact ranges and additional loss of habitat may well create a major hole in their habitat. The cumulative effect of this and other human activities, on a landscape basis is not sufficiently measured by this EIS. (S3536)

On page S-19, under Sensitive Aquatic Species, it states All action alternatives would impact.... An added point to the one made in this paragraph, is that the Montana's Bull Trout Restoration Team feels Rock Creek is essential to the bull trout recovery. (S3706)

Rock Creek is important bull trout habitat and it appears this species will be placed on the Endangered Species List this year. The Forest Service must discuss how the potential loss of bull trout in Rock Creek could impair recovery efforts and how they justify such a loss. (S3771)(S3783)(S3942)

The Rock Creek Project should not be permitted before Clark Fork bull trout is listed as a threatened species or before we understand how important Rock Creek is for bull trout recovery in the lower Clark Fork River ecosystem. (S3958)

A key issue being addressed in the collaborative is the restoration of native salmonid fish populations and in particular the reconnection of Lake Pend Oreille bull trout with tributary habitat above Cabinet Gorge Dam. The likelihood of a bull trout ESA listing as threatened exemplifies the need for special attention to the species. Rock Creek will clearly be a key stream targeted in the native salmonid restoration program since it offers potential for enhancing populations of bull trout and cutthroat trout. Existing bull trout populations in Rock Creek are considered to be one of the more stable populations in the tributaries of both Noxon Rapids and Cabinet Gorge reservoirs. Mine construction and operation in the Rock Creek drainage pose a risk to native salmonids that needs to be carefully considered. (S5830)

Within the Lower Clark Fork Drainage, Rock Creek was identified as one of four core areas, and one of two within the Cabinet Gorge system (MBTSG April, 1996). The DEIS recognizes this on Page 4-72 (Vol. 1): bull trout populations in Cabinet Gorge Reservoir are supported by only two tributaries: Rock Creek and Bull River. Core areas are drainages that, among other attributes, represent the best remaining populations throughout the historic range of the species, support valuable genetic makeup necessary for the species to experience long-term survival, and may provide fish for restoration efforts. The restoration goal for the Lower Clark Fork River Drainage that is recognized by MFWP and applies to Rock Creek and the DEIS is stated as follows:

The first component of the restoration goal (for the Lower Clark Fork RCA) is maintenance of self-sustaining bull trout populations in all watersheds where they presently exist, including the migratory life form, with maintenance of populations to at least remain stable or increase above current numbers. In addition, the reestablishment of the historic bull trout migratory corridor in the Clark Fork River - Lake Pend Oreille system is needed for the long-term survival of the species in this drainage (MBTSG April, 1996).

The ASARCO proposal to mine in Rock Creek is considered to be a very high risk to bull trout conservation and restoration (MBTSG April, 1996). Protection of remaining bull trout populations and their habitats in core areas is critical to conserving bull trout in the state of Montana. Furthermore, we believe it is important to insure that potential restoration efforts are not inhibited.

A second management plan that applies to the DEIS is the Montana Warmwater Fisheries Management Plan: 1997 - 2006. This plan was completed by MFWP personnel, public involvement and comment, and approval by the MFWP commission. For Cabinet Gorge Reservoir, the management objective is to enhance the bull trout population. Because bull trout in the reservoir originate in tributaries such as Rock Creek, it is vital to maintain or improve habitat quality in spawning and nursery streams to meet the management objective.

As stated on page C-15 (Vol. 2) WCT and bull trout are the dominant fish species in Rock Creek. Furthermore, unlike other core areas in the Lower Clark Fork, Rock Creek contains low numbers of non-native salmonids and is one of two bull trout stocks that currently have enough individuals to avoid significant risk of extinction - the other being Prospect Creek in the Noxon Rapids section (WWP 1996). Because the risks to WCT and bull trout are low compared to other systems in the Lower Clark Fork, Rock Creek is considered a very important resource to the region and to Montana. (1816)

Analyze how the proposal's impacts on the Rock Creek, Bull River, and Cabinet Gorge fisheries affect fish recovery efforts in Montana and Idaho. (S161)

Mine related impacts to bull and westslope cutthroat are among the most important issues for decision-makers to consider in the NEPA process. Both species are candidates for endangered species listing, and both are the focus of statewide restoration efforts. Therefore, the NEPA document must fully disclose all mine-related impacts to the public, as well as to the USFWS and the Governor's Recovery teams. However, our review found that the SDEIS seriously downplays the adverse effects mine-related discharges will have on protection and recovery efforts. (S6318)

Response: Alternative V (revised) in the final EIS conforms to all applicable laws and regulations. Though there remains an elevated risk of impact to aquatic biota from unforeseeable accidents, the proposed project will not conflict with recovery efforts and will actually promote recovery for bull trout in a limited manner by decreasing sediment load to the system over the lifetime of the mine. Real progress in recovery for bull trout and westslope cutthroat is fundamentally tied to resolution of fish passage and habitat issues surrounding hydropower management that is outside the scope of this project and unforeseeable at this time. The highest densities of bull trout in the lower Clark Fork area are found in Rock Creek, and these fish will be protected. Restoration of bull trout will require substantial increases in migratory bull trout that can only be produced by Lake Pend Oreille, which is an issue far larger than this final EIS and outside the scope of this project. Westslope cutthroat cannot be recovered in Rock Creek unless a substantial portion of the aquatic community is destroyed to eliminate hybrid cutthroat. At this time science does not have the tools to identify genetically pure Westslope cutthroat without killing them, and we cannot poison the hybrids without also killing the bull trout present.

Alternative V has been revised to provide for mitigation in Rock Creek only. Prevention measures are also included to minimize risks to the extent possible. Monitoring is not irrevocably tied to any given level of baseline data, particularly when a trigger value (limits of change) is established in the program.

The U.S. Fish and Wildlife Service has not listed critical habitat for bull trout. Locally, it appears the essential bull trout habitats in the lower Clark are Lake Pend Oreille, Bull River, Gold Creek (or Lightning Creek) and the mainstem river. This does not diminish the importance of Rock Creek and other existing bull trout watersheds in bull trout recovery; they will just not play as crucial a role as the lake, river and strong core watersheds. We have continued to fine-tune the proposed action to ensure that Rock Creek bull trout continue their vital role in conserving the species.

The effects analysis in an EIS reflects the objective evaluation of an alternative. Often, a project alternative must balance multiple (and sometimes competing) interests in protecting and using resources.

Rock Creek will play an important role in bull trout recovery, though not as critical as Bull River and fish passage from Lake Pend Oreille to upriver streams. Conversely, given the incidence of hybrid cutthroat in Rock Creek, it is unlikely that Rock Creek will play any meaningful role in westslope cutthroat recovery. Recovery of westslope cutthroat in Rock Creek may require widespread application of a fish poison, which of course is unlikely given the presence of the threatened bull trout. Even if science gave us an alternative tool to test each cutthroat for genetic purity without killing them, it is unlikely that we could totally eliminate the hybrid cutthroat from Rock Creek and conserve the stock native to these waters.

Alternative V now includes protection and mitigation measures needed to support the bull trout recovery effort and protect all forms of the species. However, a mining project of this magnitude and duration does include an increased risk of unforeseeable accidents that cannot be eliminated before the fact. We have modified Alternative V to substantially reduce the risk of accidents, but the risk remains. The risk of accidental loss of bull trout exists (to a limited degree) even without the mine.

Effects conclusions are based on mitigation and protection measures, not just disturbance processes. There are many elements of an alternative that threaten to cause adverse effects. Each alternative and its mitigation measures must be evaluated. In some alternatives there is limited mitigation, and the effects conclusions reflect this. In other alternatives, there are many measures used to minimize or avoid adverse outcomes. We make no attempt to "downplay" effects. In the absence of an analysis tool that produces a dependable and precise measure of the magnitude of an effect, indirect measures (extent of disturbance) and professional judgements on the significance of the effect must be used. The predictable outcome of many project activities, together with the equally well researched mitigation measures, indicates minimal effects to the aquatic environment from Alternative V (proposed action). When there is uncertainty about full success of mitigation, we require additional mitigation to ensure offsetting adverse and positive effects. It is only the unforeseeable events - the accidents, the failures to implement a measure as designed, or the catastrophic natural events - that seriously threaten the aquatic environment if they occur.

Please review Alternative V in Chapters 2, 4, the appendices, and Biological Assessment for the revised findings for the proposed action and the aquatic environment. This material indicates direct, indirect and cumulative effects to aquatic resources will be minor. In spite of the likelihood that individual bull trout will be adversely affected, implementation of the preferred alternative should not preclude recovery of bull trout.

17. Rock Creek is renowned for its trout fisheries, and is essential to the restoration of our dwindling bull trout population. Rock Creek is also home to genetically pure strains of the ever shrinking native population of westslope cutthroat trout. The construction of Cabinet Gorge Dam will necessitate the viability of Rock Creek to insure connectivity between the lake and river. (S3293)

If the project is permitted, we ask that ASARCO be involved with restoration activities in the Lower Clark Fork and Lake Pend Oreille as they pertain to Rock Creek. We are assuming that because ASARCO is pursuing permits, they intend to operate a mine; although the timing is unknown. It will be necessary that ASARCO's mitigation and monitoring plans be coordinated with other plans (i.e., Native Fish Restoration Plan being developed in WWP

relicensing) to increase the chance that these plans will succeed. This may require that mitigation and monitoring be initiated before other actions by ASARCO in Rock Creek. We request that ASARCO be open to working with and supporting citizen groups and agencies concerned with bull trout restoration in the Rock Creek watershed and the Lower Clark Fork basin. (S1816)

The EIS needs to justify the risk of loss of genetically pure strains of bull trout and cutthroat trout in Rock Creek from discharges, increased sedimentation, potential reduced flows, and potential spills and accidents. How would such losses impact fish recovery efforts in Idaho and Montana as well as mitigation efforts underway for relicensing Cabinet Gorge & Noxon Dams? Mitigations for Rock Creek need to be confined to Rock Creek, not in other drainages. (S6613)(S177)

Explain how such losses would impact fish recovery efforts in Idaho and Montana as well as mitigation efforts underway for relicensing Cabinet Gorge and Noxon Dams. (F1)(S4364)(S4891)(S4912)(S5051)(S5088)(S5555)(S5763)

I do not see any assurance that the combined mine activity and waste treatment won't impact the pure strains of bull trout and westslope cutthroat in Rock Creek, fish species that are being mitigated for in river system as part of the relicensing process. I think building a mine up Rock Creek works against our WWP efforts. (S5101)

This factor (WWP relicensing) alone should weigh heavily in evaluating the merits of the Asarco plan - it's hard to believe these Bull Trout populations could survive thirty years of this mine's operation. (S6588)

The Forest Service Should Not Rely on Fish Passage to restore Cabinet Gorge fluvial populations of bull trout. As mentioned in the SDEIS, Washington Water Power (WWP) is in the process of negotiating a settlement prior to filing an application to the Federal Energy Regulatory Commission (FERC) for the relicensing of its lower Clark Fork hydropower dams (Cabinet Gorge and Noxon Rapids dam). Arriving at agreed upon mitigation for the effects of the dams on fisheries in general and the bull trout in particular is a major issue in the negotiations. As a result, many studies have been initiated to determine the status and distribution of bull trout (and other fish species) and the condition of fish habitat in the tributaries to the Noxon and Cabinet Gorge Reservoirs, one of which is cited in the BA.

Due to the complicated nature and large number of issues that have arisen in regard to establishing fish passage at WWP's dams, it is likely to be several years before experiments with actually passing fish are implemented. Therefore it would be unreasonable and arbitrary for the Forest Service and ASARCO to rely on possibility of fish passage to restore and maintain adfluvial bull trout populations in Rock Creek. In the short term it is of the utmost importance for habitat to be improved, rather than further degraded in Rock Creek, in order to sustain existing bull trout. (S805)(S6806)(S1687)(S1851)

Analyze how the proposal's impacts on these fisheries affect mitigation efforts underway for the relicensing of the Cabinet Gorge and Noxon dams. (S161)

It should be noted that WWP, as part of its relicensing process, will be required to fund multiple mitigations for impacts to fish and wildlife in the reservoirs and downstream of Cabinet Gorge Dam. It does not make sense to allow Asarco to negate WWP mitigations (eg. fish passage, tributary enhancements, contingency and monitoring plans for grizzly bears, gray wolves, and candidate species, common loon PM&Es in the delta, wetland and riparian P.M., & Es, etc.). (6312)(S2117)

Response: It should be noted that the Rock Creek renowned for its fisheries is the Rock Creek 20 miles east of Missoula. Rock Creek is not hydrologically affected by this proposal. We have revised Alternative V in the final EIS to require sediment mitigation and other measures to offset projected impacts. We used a safety factor of 200% above projected sediment effects to account for any unknowns or uncertainties. This mitigation work would occur prior to or concurrent with various

phases of project construction and operation (and be subtractive rather than additive to construction effects), and would be distributed throughout the Rock Creek watershed to protect various fractions of the animal community. As we note in other responses (above and below), although we anticipate a major recovery program in the lower Clark Fork largely connected to dam relicensing, this recovery effort is not foreseeable in its precise nature and extent at this time. The proposed mine, together with its many mitigation, protection and monitoring requirements, would be consistent with (and aid) the species recovery work under consideration in the area.

The Agencies are not "relying" upon dam fish passage to restore migratory bull trout. We mentioned this effort to highlight our conclusion that fish passage is the only effective way to restore bull trout to their potential in the lower Clark Fork. Maintaining or restoring habitats in reservoir tributaries would not significantly reduce the risk of extirpation in each tributary because they would still be isolated from each other, and it would not benefit Lake Pend Oreille. The reservoirs are marginal habitat for trout in general and bull trout in particular, so bull trout leaving tributaries rarely become large migratory fish that connect stocks. Even if Rock Creek was exporting maximum numbers of migratory juveniles, the migratory bull trout numbers would likely not change significantly because the reservoirs cannot support bull trout in the summer. Without fish passage around the Cabinet Gorge dam the best that can be expected from bull trout recovery in Montana (Thompson Falls - State Line) is moderate to large numbers of juveniles and resident bull trout in reservoir tributaries (with human assistance), and only a marginal migratory (large adult) bull trout run associated with Cabinet Gorge reservoir.

Sterling would be initiating actions concurrent with project startup that will aid the recovery effort in the long term. Whether they participate in recovery in some other manner is entirely their prerogative - there is no legal or regulatory authority to require their participation.

18. The finding states that the proposed project may jeopardize adfluvial bull trout, and resident bull trout may be adversely affected in the mainstem of Rock Creek. The proposed project is not likely to jeopardize the resident component of the metapopulation because only minor impacts, if any, are expected to occur upstream of the proposed mill site, where most of the resident bull trout are found. These statements also strongly suggest that habitat in the mainstem may be jeopardized, whereas habitat above the mill site is not likely to be jeopardized. The findings do not address the primary issue of whether or not the proposed project will affect the viability and persistence of the Rock Creek stock which 1) is comprised of both adfluvial and resident fish, 2) uses different stream reaches at varying proportions depending on the season or year, and 3) is, until proven otherwise, independent of other stocks. It is our opinion that this project is likely to jeopardize the Rock Creek Stock. This is supported by the DEIS with the following statements:

On page 4-180 (Vol. 1), it is stated that declines in fish abundance in Rock Creek could be expected under any action alternative. These declines would be the result of the combined effects of habitat and water quality degradation, of the project and natural events, and foreseeable activities.

On page 4-72 (last sentence of the fourth paragraph), it states, given the precarious state of the fish in this system, the loss of Rock Creek as a spawning and rearing tributary could push bull trout further towards elimination in this drainage.

The last paragraph on page 4-76 states that the proposed project and other concurrent activities could jeopardize the continued existence of adfluvial bull trout in Rock Creek by increasing sediment loads during construction .

Bull Trout Section - 9 states in spite of mitigation activities, additional sediment is likely to enter Rock Creek as a result of the ASARCO Rock Creek project .

Bull Trout Section - 9 states this model (R1-WATSED) predicted that annual sediment yield in the entire Rock Creek watershed during the initial stages of the project would be 30% greater than existing conditions .

Bull Trout Section - 9 states Increased levels of deposited sediment could reduce the quantity of aquatic macroinvertebrates, the food base for bull trout, in Rock Creek. Reduced food base could result in slower growth rates, higher mortality, and reduced fecundity of bull trout .

Bull Trout Section - 10 state habitat degradation could result in brook trout gaining a competitive advantage over bull trout. Brook trout interbreed with bull trout and the offspring are sterile (Note to the editor: Usually the hybrid is sterile). It is generally believed that such a mating is detrimental to bull trout population (Note to the editor: This is definitely detrimental because the hybrid is no longer a bull trout and the potential for F₂ fish exacerbates the problem.).

Bull Trout Section - 9 cites Rieman and McIntyre (1993) by stating in the absence of detailed local information on population habitat dynamics, any increase in the proportion of fines in substrates should be considered a risk to the productivity of an environment and to the persistence of associated bull trout populations .

These statements, as well as those concerning sediment mitigation, clearly indicate Alternatives II-V, as proposed, will jeopardize the Rock Creek core area and stocks of bull trout and WCT contained therein (many of the potential impacts apply to WCT as well). Rieman and McIntyre (1993) state that risk of extinction may greatly increase where resident populations of bull trout include fewer than 1,000 to 2,000 bull trout that are yearlings or older . Assuming that the Rock Creek bull trout stock is largely resident (again, we believe the total number of bull trout 1-year or older is about 1,900), any further reduction in numbers may greatly increase their risk of extinction. (S1816)

Why does the SDEIS draw no conclusions from the population viability analysis it provides for Bull Trout? (S3462)

Response: Because bull trout are now listed as threatened under the Endangered Species Act, a viability analysis and finding is a moot point. By definition the viability of a listed species in Rock Creek is marginal or worse because they are threatened, so Alternative V takes steps to reverse this trend and promote recovery. We predict a long-term, but relatively small to unmeasurable, positive response by bull trout to the proposed project absent an accidental or catastrophic event that is unforeseeable.

19. Impacts to the West Fork habitat and fishes are not considered in the Statement of Findings. Rather, the finding focuses almost entirely on the mainstem, suggesting it is the only portion of the drainage that may be impacted (pages Bull Trout Section - 16 and 17). The West Fork contains significant numbers of bull trout, as well as proposed impacts that include a pipeline, road improvement/building, the exploration adit, and possible ground water loss. If impacts to the West Fork could be significant, a minimum of about one-third of the bull trout and WCT stocks in Rock Creek would be jeopardized (see table above). A more thorough review of the impacts to the West Fork is needed. (S1816)

Response: Please review the bull trout Biological Assessment (Appendix B) for the Section 7 Endangered Species Act evaluation of the proposed action. This is consistent with the Interagency agreement on consultation for the species. We have corrected some errors in logic from the supplemental EIS concerning the nature of effects in the West Fork of Rock Creek.

20. 4-72, paragraph 2 Indicates potential loss of resident bull and cutthroat trout. This is not consistent with page 17 of the bull trout Draft BA (Appendix B). Most of the resident habitat is upstream of the Alt. V mill site. (S5)

4-72, paragraph 4, last line - There is no basis for the conclusion that Rock Creek will be lost as spawning habitat. (S5)

There is no data to suggest that there are genetically different resident and adfluvial populations of bull trout. Bull trout from the east fork and possibly West fork of rock Creek are carried downstream by current or swim and enter Cabinet Gorge Reservoir. These fish may remain in CGR until they attain spawning size and then migrate back into Rock Creek. (S5)

Response: The statements on page 4-72 of the supplemental EIS do not match those found in the biological assessment because page 4-72 describes the findings for Alternative II. A biological assessment is prepared for the preferred alternative only (Alternative V). We agree that some bull trout are unlikely to be affected because they are outside (and upstream) of project activities. However, as noted by other commentors these fish do move around in response to habitat changes, and an error in our supplemental EIS analysis of West Fork of Rock Creek effects is corrected in the final EIS. Fish in the West Fork of Rock Creek would likely not be affected by the mill site, but they would be affected by exploratory adit activities, and fish in the east fork could be affected to the extent that they move into the west fork or mainstem at some point in the year. Also, the supplemental EIS does not say (at 4-72 paragraph 4) that the migratory bull trout will be lost as a result of the proposed action - it simply highlights how important Rock Creek is, and notes that conservation of the species in the area cannot succeed if this stock is lost.

21. Justify the risk to these populations, especially since both species are considered sensitive under the Endangered Species Act, with petitions pending to list the westslope cutthroat and bull trout as endangered. (S161)

The Biological Assessment for bull trout fails to fully assess the impacts to bull trout. The BA and SDEIS also fail to demonstrate that the proposed mitigation measures will offset adverse impacts to fish. (S22)

Response: Please review Chapter 4 and the final bull trout Biological Assessment (Appendix B) for the revised evaluation for this species. As noted elsewhere in our responses, a biological evaluation was not prepared for westslope cutthroat because the Rock Creek population has been irretrievably lost to hybridization. We have consulted with the U.S. Fish and Wildlife Service for bull trout and other threatened and endangered species.

22. Bull Trout Section p16, paragraph 4 - Neither the draft BA nor the SDEIS provide adequate data to conclude that The proposed project and other concurrent activities may jeopardize the continued existence of adfluvial bull trout in Rock Creek or that Loss of the adfluvial bull trout component or their habitat, in Rock Creek would decrease the likelihood of successful restoration or maintenance of bull trout in the Cabinet Gorge system. There is very little evidence for use of main stem Rock Creek as a spawning habitat by adfluvial bull trout (evidence cited in the biological assessment appears to be limited to the sighting of one possible redd on the main stem). (S5)

The Statement of Finding also suggests other, less direct, negative impacts on the bull trout stock in Rock Creek. For instance, by possibly jeopardizing the adfluvial life form and further promoting the resident form, the stock could lose the benefits of migratory fish (e.g., higher fecundity, use of diverse habitats, etc.). Additionally, if habitat in the mainstem is degraded it would result in further fragmentation of Rock Creek, leaving suitable habitat to the smaller tributaries in the drainage. Rieman and McIntyre (1993) state that Fragmentation and disruption of bull trout habitats will increasingly isolate populations and isolate or eliminate life-history forms. Fragmentation and disruption of habitats will reduce survival, growth, and resilience of individual populations and increase variation in their sizes. Those effects will increase the risk of extinction. We believe that loss or reduction of the adfluvial

life form and degradation of habitat in the mainstem of Rock Creek will result in increased risk of extinction of both bull trout and WCT, particularly bull trout. (S1816)

Additional Information Needed: The BA questions whether Rock Creek supports migratory as well as resident bull trout. (BA at 2). The information on which this is based is scanty at best. Clearly more information must be gathered in order to conclude that Rock Creek no longer supports adfluvial bull trout. In any case the Forest Service must ensure that the impacts of the project do not preclude bull trout from returning to Rock Creek to spawn and that rearing habitat in Rock Creek is also available to migratory bull trout. (S805)(S6806)(S1687)(S1851)

There is no evidence to support the statement that Rock Creek is a major spawning area for Cabinet Gorge bull trout. The possibility that bull trout, spawned from the East Fork, move down stream into Cabinet Gorge Reservoir should be addressed. (S5)

Response: The data for use of Rock Creek by spawning adfluvial (migratory) bull trout, or large adults seeking a thermal refuge from the reservoir, is limited and far from conclusive. However, because the resident stock of Rock Creek bull trout is connected to the reservoir at some times of the year, because bull trout are known to migrate at various times of the year in response to water quality conditions, because resident and migratory bull trout probably only differ in terms of behavior, and because there is at least some indication of migratory fish in the watershed, we assumed as the state of Montana does that Rock Creek is one of two Cabinet Gorge reservoir tributaries that are essential for bull trout conservation by (among other measures) recovering a strong migratory run of bull trout that connects all existing stocks of the species.

New information from Avista (formerly Washington Water Power) for the distribution and abundance of bull trout throughout the lower Clark Fork area indicates Rock Creek is an essential stock for conservation purposes. Not only is the species more abundant than elsewhere locally, but Rock Creek is also in better condition physically. Given that these data also show that Rock Creek is well within the range of conditions preferred by the species, while most other streams are not, we support the findings of the State of Montana that Rock Creek is one of the two watersheds where conservation efforts should focus on recovery of the migratory bull trout. As far as "major spawning stream" - this is a finding from Montana's bull trout status review that classified Rock Creek as one the "best of the last." Rock Creek will probably never support hundreds of spawning migratory bull trout, but it appears Rock Creek and Bull River are the only two good candidates for the recovery effort.

23. The BA for bull trout assumes that the adverse effects downstream of the mine area are of little consequence for the long term viability of bull trout. You simply have no analysis to support such a conclusion. Your analysis does not support the implied conclusion that isolation of the populations upstream of the mine will still result in a viable population, somewhere. (S177)

Page S-20. Bull Trout and cut throat trout are threatened. There is nearly no mitigation. Alternative V seems to imply that there will be no impact above the new location for the mill site. (S3462)

Response: The supplemental EIS predicted that migratory bull trout could be put in jeopardy by the preferred alternative, but that resident bull trout would be largely unaffected by the project because of their location. The resident bull trout findings were in error, and we have corrected this problem in the final EIS. Nevertheless, the impacts to aquatic habitats downstream from the mine are the prime reason for the "likely to adversely affect" finding. We did not produce a viability finding in the supplemental EIS because it is not required in a NEPA document, nor is there sufficient scientific knowledge available to do this with any degree of confidence.

24. *Why is the Bull Trout biological assessment not signed? Is it not standard procedure to require the biologist to sign off on the final document? (S3462)*

Response: The supplemental EIS Biological Assessment was not signed because it is a draft document for information purposes only. The final version of the Biological Assessment appears in the Appendix B of this final EIS. This document is signed because it is our formal communication tool with the U.S. Fish and Wildlife Service for consultation on effects to threatened and endangered species.

25. *Due to the importance of Rock Creek to maintenance of bull trout in the Lower Clark Fork drainage, the Department believes that the Forest Service should fully adopt the FWS's February 1998 recommended framework of analysis procedures (draft) for bull trout at the fifth or sixth field Hydrologic Unit Code watershed scale. The FWS's February 1998 framework should provide sufficiently detailed analysis procedures to provide a better basis for the Forest Service's analysis and conclusions regarding the impacts to bull trout. (S971)*

Response: The Biological Assessment included in the final EIS is based on the U.S. Fish and Wildlife's February 1998 framework.

26. *The proposed project and other concurrent activities could jeopardize the continued existence of adfluvial bull trout in Rock Creek by increasing sediment loads during construction or in the event of a severe mine-related accident. [emphasis added] (4-77). Conferencing with the USFWS must occur in order to determine a jeopardy ruling for ESA proposed-listed species, the bull trout. It is likely that this project will jeopardize the bull trout, thus violating the Endangered Species Act. (S22)(S188)*

Page S-19 6th paragraph "Since Rock Creek ... degradation of Rock Creek bull trout spawning habitat would significantly impact Cabinet Gorge bull trout." Can this be interpreted as "trend toward federal listing"? If so, see page 1-8; Forest Service Manual 2672.32-4 which states Forest Supervisor cannot issue permits if significant effects results in loss of species viability. (S4832)(S4833)

Page 4-72 Fish: pushing the bull trout towards elimination, is not a prerogative of the Forest Plan, nor the ESA. (S614)

Page 4-77 Loss of the adfluvial bull trout component..... This is not a prerogative of the Forest Plan. (S614)

The ESA requires Federal Agencies to conference with the US Fish and Wildlife Service when Federally Approved projects May Affect Candidate Species. The ESA prohibits federal agencies from authorizing, funding, or undertaking activities that adversely affect listed species. This duty is mandatory and ongoing. The consultation process is intended to ensure that agencies comply with their ESA requirements. On the other hand, the conferencing process -- which applies when the species at issue has been proposed for listing, but not yet listed -- takes place prior to formal listing and is intended to be an informal means of "identifying and resolving potential conflicts at an early stage in the planning process." 50 CFR sec. 402.10(a).

As far as can be gleaned from the Supplemental DEIS and Biological Assessment, no conferencing is taking place among the relevant agencies with respect to bull trout. As discussed above, the ESA requires conferencing in this situation. Moreover, the FWS, FS, and BLM have entered into an interagency bull trout conferencing guidance document setting forth a strategy for conducting conferencing. Preliminarily, and at a minimum, we request that the agencies involved here initiate conferencing. (S805)(S6806)(S1687)(S1851)

I also note the use of the phrase "may jeopardize" in the statement of findings p. 16 of BA Bull Trout Appendix B. Please explain why this particular BA does not use a phrase that is more typical of BAs (and more useful to the reader), such as "is likely to jeopardize, is likely to adversely affect." There is certainly adequate information in the Bull Trout BA to justify these more typical phrases. (S3462)

We believe the potential threats to bull trout survival posed by mine related activities warrants formal consultation with the USFWS. We realize the fish has not been formally listed, but the listing is reasonably foreseeable, and we believe consultation should occur. (S6318)

Page 2-122 5th paragraph "Increased sedimentation ... would lead to elimination of these fish populations ..." and "...would significantly impact Cabinet Gorge bull trout." How has the "trend towards species listing" been assessed relative to loss of these populations? (S4832)(S4833)

Page 3-51 2nd paragraph I realize the proposed project is in Montana, but USFS and USFWS should consider findings by Pratt and Houston (1993) that Lake Pend Oreille bull trout are in danger of extinction. Is there a relationship of admitted bull trout loss in Rock Creek as a result of mine, to bull trout in Lake Pend Oreille? USFWS should consider this. Bull trout is up for listing. Permit must be denied if "trends to listing" or species' existence jeopardized. (S4832)(S4833)

Page 4-77 1st incomplete paragraph "Loss of adfluvial bull trout ... decrease likelihood ... of restoration ...". Can this be interpreted as potentially trending the species "toward listing?" (S4832)(S4833)

Page 4-183 under "Aquatics/Fisheries" "... loss of bull and/or westslope cutthroat trout could be long-term or permanent." Is this keeping in line with the ESA? (S4832)(S4833)

In accordance with the Endangered Species Act (ESA), the US Fish and Wildlife Service (USFWS) should recognize the project as jeopardizing the continued existence of bull and cutthroat trout. The project jeopardizes the genetically important bull trout population in Rock Creek, critical to bull trout recovery in the Cabinet Gorge watershed. The project requires additional modification to be reasonable and prudent in accordance with the ESA. (S188)

Response: The Endangered Species Act requires protection of all remaining individuals of a listed species, and is a non-discretionary regulatory requirement of this and all other authorized activities. Please review the bull trout Biological Assessment in Appendix B of the final EIS. The conclusion in the Biological Assessment was revised after a review by, and recommendations from, the Western Montana Regional Level 1 Team. The conclusion is that the project is likely to adversely impact bull trout habitat and individuals in Rock Creek but would not affect the Columbia River population. The Agencies have consulted with the Fish and Wildlife Service as required by Section 7 of the Endangered Species Act. This consultation followed the procedures outlined by the Fish and Wildlife Service for bull trout consultation. As noted in other responses, the Agencies did not conference on Westslope cutthroat because the species has been irreversibly lost in this watershed due to hybridization, and it has not been proposed for listing. Although the final EIS indicates bull trout individuals may be significantly affected, loss of the Rock Creek bull trout stock would probably have little or no effect on the bull trout population in Lake Pend Oreille since connectivity between these stocks has not been reestablished.

27. We believe that the SDEIS for this mine proposal violates a number of state and federal environmental requirements, and consequently, that additional information must be presented to the public before a Final EIS is issued. Our primary concerns relate to: unacceptable project-related impacts to native bull and westslope cutthroat trout; This lack of detailed information prevents the public from reviewing and commenting on all relevant information, and the responsible Agencies from making informed decisions. These inadequacies must be addressed to assure compliance with the National and Montana Environmental Policy Acts. (S6318)

Additional Information and Scientific Data must be Included in order for the FEIS and Final Bull Trout BA to Comply with NEPA. Based on the information presented in the BA, it is clear that certain essential data and

information regarding current habitat conditions and bull trout distribution needs to be collected in order for the effects analysis to meet the information requirements of NEPA. (S805)(S6806)(S1687)(S1851)

Response: Comments that state the supplemental EIS does not contain enough information (or details) are inherently difficult to answer. Information from one reader's perspective could be too scanty, while another reader is confused by too much detail. We default to the NEPA regulations that require preparing a succinct document that addresses the significant issues, and is not encyclopedic. We do not consider impacts that are "unacceptable" to mean the document is inadequate in its disclosure of information.

28. Westslope cutthroat trout (WCT) and bull trout are distributed throughout the mainstem of Rock Creek, the West Fork of Rock Creek and portions of the East Fork of Rock Creek. Existing westslope cutthroat and bull trout populations in Rock Creek are highly threatened.

According to the Forest Service Manual, 2670.31, the Forest Service is to place top priority on the conservation and recovery of endangered, threatened, and proposed species and their habitat. The SDEIS should demonstrate that the proposed activity will not only not harm the bull trout or the westslope cutthroat trout (WCT), but will somehow benefit these species. The Supplemental DEIS for the ASARCO Rock Creek Project has done neither.

The SDEIS states, Some impacts to water quality are possible as a result of mine construction and operation for all action alternatives. Impacts to water quality may affect fish and aquatic macroinvertebrates and plants. The impacts may include a reduction in numbers of individual organisms, a change in species composition, a reduction in species diversity, or a combination of the above. In general, all action alternatives would have these potential impacts (SDEIS, 4-64). Such acknowledged impacts violate NFMA, the Forest Service Manual, and the Kootenai Forest Plan. With such impacts, this project will not be able to proceed. (S22)

It is clear that increased sediment, nutrient loading and other inevitable impacts from the proposed project will jeopardize the long term existence of the dwindling Rock Creek bull trout populations. If the Forest Service Record of Decision for this project allows it to go forward, that decision will be in violation of the National Forest Management Act, in part for failing to maintain viable populations of sensitive species, and the ESA, assuming the bull trout is listed before the decision is issued. (S805)(S6806)(S1687)(S1851)

Regardless of when and where these projects finally occur, it is clear that the abatement projects will not eliminate, or even offset mine-related sediment increases. Construction and roadbuilding activities will increase sediment loads in Rock Creek. The SDEIS analysis confirms this fact, stating on page 4-56 and page 9 of the BA that "the RI-WA TSED modeling results for Alt. V actions show a 30 percent increase in annual sediment yield during the life of the mine."

These increased sediment loads will adversely effect resident fish in Rock Creek. Page 9 of the BA recognizes this fact, stating "in spite of mitigation activities, additional sediment is likely to enter Rock Creek as a result of the Rock Creek project. Most of the impacts will likely occur during the three-year construction period."

In addition, the sediment load increases also threaten migratory bull trout from the Cabinet Gorge reservoir that depend on Rock Creek for spawning and rearing habitat. The SDEIS recognizes that adfluvial bull trout are an important component of bull trout populations in the Cabinet Gorge system, and that those populations are low and at a very high risk of elimination. It concludes that "given the precarious state of the fish in this system, the loss of Rock Creek as a spawning and rearing tributary could push the bull trout further towards elimination in this drainage."

In spite of the importance of Rock Creek to these migratory populations, page 4-76 admits "the proposed project and other concurrent activities could jeopardize the continued existence of adfluvial bull trout in Rock Creek by increasing sediment loads during construction, or in the event of a mine related accident."

Considering these projected-related impacts, the Forest Service (or any federal agency) cannot approve the Project under any of the proposed action alternatives. Under Section 313 of the federal Clean Water Act, federal agencies cannot permit an activity unless that activity "compl[ies] with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution" 33 U.S.C. 1323(a).

In this case, the Project will unduly and adversely effect the beneficial uses of aquatic life in Rock Creek, especially the mainstem. The Supreme Court has ruled that protection of beneficial uses such as aquatic life is a "water quality standard" protected under the Clean Water Act. PUD No. 1 v. Washington Department of Ecology, 114 S.Ct. 1900 (1994). As such, the Forest Service cannot approve any activity that would so impair the existing beneficial uses in this case. Marble Mountain Audubon Society v. Rice, 914 F.2d 179, 182 (9th Cir. 1990)(Forest Service must comply with state water quality requirements).

We believe the threats that project-related increased sediment loads even with the proposed sediment abatement projects pose to native bull and westslope cutthroat trout in Rock Creek are unacceptable. In it's discussion of Alternative II, the SEIS notes on p. 4-72 that "habitat degradation from the project may be sufficient to cause the loss of resident bull trout and westslope cutthroat trout in Rock Creek", and that "habitat degradation may give brook trout a competitive advantage over bull trout." Considering the discussion above, these impacts must be assumed for Alternative V as well.

The SDEIS only apparent attempt to address this issue is found on p. 4-183, which states, Even if local elimination of aquatic species should occur, recolonization should generally be rapid once the habitat recovered. This position is indefensible considering the precarious nature of bull and westslope cutthroat trout in Rock Creek, and the fact that support of cold water fish is a designated beneficial use in Rock Creek. (S6318)

Response: Alternative V now includes increased sediment mitigation from that originally included in the supplemental EIS. The effects analysis in the final EIS and the Biological Assessment concludes that the Rock Creek subpopulation of bull trout should not be adversely affected, although short-term increases in sediment loading during project construction are likely to adversely affect bull trout individuals. The WATSED model results are intended for comparison of alternatives. Since the model does not include any proposed mitigation, the results are not used to assess impacts. Because of the increased sediment mitigation included in Alternative V, the project would fully conform to the National Forest Management Act, the Clean Water Act, the Endangered Species Act and other applicable laws and regulations.

29. *Page 2-78 Last paragraph "Mitigation would include funding ...". Is this intended to pay someone to protect and educate the public about bull trout habitat while intentionally destroying creeks that harbor bull trout as a result of mine activities? Does this make sense? (S4832)(S4833)*

Response: As we have said in Chapter 4 and the biological assessment for bull trout, implementation of the preferred alternative is likely to adversely affect bull trout individuals and habitat on a localized scale in the short term. Over the long term and at the watershed scale, however, habitat conditions and the status of the Rock Creek subpopulation of bull trout are not likely to be adversely affected and may even improve marginally. Therefore, the creek would not be "destroyed" as a result of the mine activities. The position to be funded would help educate people about threatened and endangered species as well as sensitive species (animals, fish, and plants) and how they can help reduce human impacts on these species separate from what would be required from Sterling.

30. *[The SDEIS] fails to acknowledge the potential loss of adult bull trout to increased angling pressure that will result as more people are drawn to the area. There appear to be genetically pure strains of both bull trout and westslope cutthroat trout in the Rock Creek system. They are an important historical member of the CMW's community of life. Any impact to these fishes will impair the unique biological qualities of the Cabinet Mountains Wilderness. (S6348)*

The comment in the SDEIS that bull trout populations above the mill site will be unaffected is unsubstantiated and biologically naive. What about increased fishing pressure and other disturbances caused by the massive influx of humans (miners and family members, friends) to the Rock Creek drainage (West and East forks)? Where is the analysis of these impacts? Why does the fish section of the SDEIS not contain full disclosure of impacts to bull trout?

Page 2-78 para. 6, Angling pressure is sure to increase due to greater access, possibility that FW&P might have to close Rock Creek to all fishing as a mitigation measure, to forestall impacts to BT. (S614)

Response: Chapter 4 of the final EIS notes that increased angling pressure in Rock Creek would be likely during the construction period due a large influx of temporary residents. Once the mine moves into production, there should be an off-setting decline in fishing pressure as anglers abandon a watershed with relatively high levels of human activity. These effects would be partly an indirect consequence of the project, but also result from a regulatory decision by the State of Montana to allow fishing in waters that contain bull trout and other sensitive species.

Recreational fishing would indeed result in some bull trout being caught. We expect the majority of captured bull trout would be released as required by State fishing regulations, but we cannot dismiss the possibility of deliberate or unintentional mortality of bull trout from recreational fishing. The U.S. Fish & Wildlife Service has issued a Section 10 take permit to the State of Montana for incidental mortality resulting from regulated fishing activities.

We note in several other responses in this section that important revisions to Alternative V have been made to minimize or avoid impacts to bull trout and cutthroat. Further, we note once again that although there are genetically pure westslope cutthroat individuals unique to this watershed, these fish are mixed within a hybridized population. From a conservation biology perspective, westslope cutthroat are effectively lost in this watershed with or without the proposed project because individual fish cannot be protected from hybridization in the wild.

We have revised the statement that bull trout upriver of the mill site would be unaffected. In the west fork, bull trout would be briefly affected by a period of exploratory adit development and ore evaluations. The bull trout upriver in the east fork would be unaffected by the direct outcomes of the project, but might experience minor indirect effects from human recreational activities. In both instances, however, because of the comprehensive protection and mitigation measures applied to this project, the bull trout subpopulation would not be adversely affected.

A final EIS must disclose significant impacts, as well as assess effects relative to issues and concerns of significance to the general public and resource managers. The final EIS need not contain a discussion of every conceivable issue, nor include purely speculative disclosures. Conversely, the analysis process must cast a "wider net" to ensure that issues and effects relevant to the decision are not overlooked. The NEPA/MEPA regulations indicate that an EIS must be informative rather than encyclopedic. Thus, if the reader finds that material of interest to them is absent, it is more likely

than not that the assessment team found this information or issue of interest did not meet the requirements for disclosure in the final EIS. Because of the over-lapping regulatory requirements under NEPA and the Endangered Species Act, we use the Biological Assessment (Appendix B) as the primary vehicle for disclosing the detailed analysis of effects for bull trout, and the final EIS text in Chapter 4, Aquatic/Fisheries and Threatened and Endangered Species sections as more of a summary disclosure.

31. *We object to the Agencies apparent attempt to downplay impacts to native fish in the West Fork of Rock Creek. The SDEIS' suggestion that fish populations in the headwaters portions of the West Fork Rock Creek will remain relatively undisturbed (page 4-75) simply is not true. This statement, and others like it in the SDEIS, are misleading to the public, and are not supported by the Agencies' own Biological Assessment presented in Appendix B*

For example, page 7 of the BA says that bridge construction could result in minor, short-term impacts to water quality in the lower West Fork of Rock Creek; that the West Fork of Rock Creek upstream of the mill site could be affected by improvement of the exploration adit access road (FDR #s 150, 2741, and spur road), construction of the exploration adit patio and waste rock dump;" and that "impacts to the West Fork of Rock Creek should be minor and/or short-term."

We agree that the 300-foot buffer zone around the confluence mill site will help reduce impacts to native bull and westslope cutthroat trout in Rock Creek and its tributaries (SDEIS p. 4-75). However, we also recognize that the buffer zone will not eliminate those impacts. Native fish populations will be effected by discharges to the West Fork, and the NEPA document must disclose those impacts. (S6318)

Response: The effects evaluation in the EIS for fish populations in the West Fork of Rock Creek now indicates that potential impacts would be minor and short-term. However, increased sediment loading due to mine construction is likely to adversely affect individual bull trout. Over the long-term, effects are expected to be negligible due to planned sediment mitigation. The reference to "relatively undisturbed" was dropped in the EIS.

32. *How does this project avoid "take" happening to the endangered species? FWS written statement should address that everything is done reasonably, and prudent to protect the species and to conserve listed species. (S3655)*

Response: A taking may occur under the Endangered Species Act with permits issued by the USFS and DEQ. The USFWS Biological Opinion identifies reasonable and prudent measures and mandatory terms and conditions to ensure conservation of bull trout. These terms and conditions provide for monitoring that will permit modifying operations as needed to further reduce the potential for take. The Biological Opinion identifies the potential for incidental take of bull trout to occur due to increased sediment delivery during construction, changes in water chemistry and flows. The best available scientific data are not sufficient to allow the USFWS to quantify the amount of bull trout incidental take. The USFWS believes implementation of the reasonable and prudent measures are necessary and appropriate to minimize incidental take of bull trout (USFWS 2001). Changes to the agencies mitigation and monitoring plans were incorporated into Alternative V in the final EIS as a result of the requirements in the terms and conditions in the Biological Opinion (USFS KNF 2001a).